DOCUMENT RESUME

ED 478 665 PS 031 417

TITLE	Childhood Obesity: Causes and Prevention. Symposium Proceedings (Washington, DC, October 27, 1998).
INSTITUTION	Food, Nutrition, and Consumer Services (USDA), Washington, DC. Center for Nutrition Policy and Promotion.
PUB DATE	1998-10-27
NOTE	122p.; Papers presented at a Symposium on Childhood Obesity (Washington, DC, October 27, 1998).
AVAILABLE FROM	Center for Nutrition Policy and Promotion, 3101 Park Center, Room 1034, Alexandria, VA 22302-1594. Tel: 703-305-7600; Fax: 703-305-3400; e-mail: info@cnpp.usda.gov; Web site: http://www.usda.gov/cnpp. For full text: http://www.usda.gov/cnpp/Seminars/obesity.PDF.
PUB TYPE	Collected Works - Proceedings (021)
EDRS PRICE	EDRS Price MF01/PC05 Plus Postage.
DESCRIPTORS	Adolescents; At Risk Persons; *Child Health; *Children; Federal Programs ; Government Role; Health Promotion; *Nutrition; Nutrition Instruction; *Obesity; Physical Activity Level; *Physical Fitness; Prevention; *Public Policy
IDENTIFIERS	Department of Agriculture; Food Assistance Programs; Nutrition Education Program; Nutrition Services

ABSTRACT

This report documents the proceedings of a 1998 symposium on the causes and prevention of childhood obesity sponsored by the U.S. Department of Agriculture (USDA) Center for Nutrition Policy and Promotion to focus attention on the growing problem of childhood obesity in the United States and the link between nutrition and health. Following opening remarks by the USDA Under Secretary for Food, Nutrition, and Consumer Services and by the Surgeon General, the symposium was organized in two sections, punctuated by remarks of the Secretary of Agriculture. The scientific presentations focused on findings regarding causes of childhood obesity and prevention strategies: (1) "Childhood Obesity: The Contribution of Diet and Inactivity" (William Dietz); (2) "Obesity and Health Risk in Children" (Michael Goran); (3) "Factors Influencing Food Intake Implications for Childhood Obesity" (Leann Birch); (4) "Strategies for the Primary Prevention of Obesity in PreSchool-Age Children" (Christine Williams); and (5) "Preventing Obesity in School-Age Children and Adolescents" (Thomas Robinson). Presentations focusing on public policy and recommendations were as follows: (1) "The Role of Government Programs in Reducing Childhood Obesity" (Donna O'Hare); (2) "Child Nutrition Programs: Prevention through Education" (Connie Evers); (3) "Choosing a Policy Strategy: The Carrot or the Stick?" (Barbara Moore); (4) "Moving Children into the Next Century: The Federal Perspective" (B. Don Franks and Christine Spain); and (5) "The Role of USDA's Food Assistance Programs in the Fight Against Childhood Obesity" (Laura Sims). Question-answer sessions followed both the scientific papers and the policy papers, and are transcribed. Closing remarks by the USDA Under Secretary for Food, Nutrition, and Consumer Services report that the USDA will ask the presenters to arrive at three to five strategies that could be accomplished within the next year. (KB)

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Childhood Obesity: Causes & Prevention

Symposium Proceedings

October 27, 1998

SPONSORED BY

Center for Nutrition Policy and Promotion
U.S. Department of Agriculture
1120 20th Street, NW
Washington, DC 20036

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CENTER FOR NUTRITION POLICY AND PROMOTION

Foreword

In the 1940's, as the Nation positioned itself to enter World War II, it became increasingly evident that many of our young recruits coming primarily from the farms and rural communities of America were bone-thin and hollow-cheeked to the point of failing their physicals. In response to the problem of malnourishment, President Harry S Truman created the National School Lunch Program.

Over the years, with the aid of Federal food assistance programs, expanding agricultural production, and a growing economy, malnourishment soon vanished.

Today, we as a Nation are faced with a different and possibly more difficult and intractable crisis — that of obesity at epidemic proportions. Of particular concern is the problem of childhood obesity. Today, 1 in 5 children is overweight or obese. Childhood obesity is likely to persist into adult life and puts individuals at risk for stroke, hypertension, diabetes and other chronic diseases. It is also in childhood where eating habits are formed for a lifetime.

Now as never before, the nutrition and medical communities are acutely aware of the link between nutrition and health. To focus attention on this growing problem, we at the Department of Agriculture held a symposium on **Childhood Obesity: Causes and Prevention** on October 27, 1998. There some of the leading scientific and policy experts in nutrition, diet and physical activity gathered to discuss solutions to prevent long-term health risks associated with childhood obesity.

By gaining a better understanding of the complexities of childhood obesity and how it may be prevented, we are better able to improve the health and well-being of today's children and tomorrow's adults.

Rajen Anand, Ph.D.
Executive Director
Center for Nutrition Policy and Promotion
Department of Agriculture

CNPP BACKGROUND

The Center for Nutrition Policy and Promotion was established in December 1994 at the direction of the Secretary of Agriculture. The Center is an independent resource in USDA working cooperatively with other departments and agencies to assist in providing strategic planning and coordination for nutrition policy analysis and promotion. Through its nutrition promotion initiatives, nutrition research is translated into information and materials for health professionals, corporations, and consumers to increase public knowledge and understanding of the importance of good nutrition and its relationship to health.

The Center for Nutrition Policy and Promotion reports to the Under Secretary for Food, Nutrition and Consumer Services. The Center is located at 1120 20th Street, NW, Suite 200, North Lobby, Washington, DC 20036. Telephone 202-418-2312, Fax 202-208-2322, Web site www.usda.gov/cnpp

NOTE TO READERS

Visuals Used in Symposium Presentation

Charts and graphics used in the symposium presentations are not included in these proceedings.

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The information and opinions contained in these proceedings are those of the authors and do not necessarily reflect either the opinion or official position of the U.S. Department of Agriculture or its agencies.

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OPENING REMARKS -- MORNING SESSION

Shirley Watkins, Under Secretary, U.S. Department of Agriculture, Food, Nutrition, and Consumer Services--Good morning. I am delighted to see all of you this morning. I am Shirley Watkins, the Under Secretary for Food, Nutrition and Consumer Services here at the Department of Agriculture. Let me extend a very warm welcome to all of you who have joined us today for this very significant symposium on childhood obesity--its causes and prevention.

This is the first time that the Department of Agriculture has sponsored a conference, or a symposium, or a lecture, or anything of this magnitude looking at the health-related risks of children, and specifically targeting obesity.

We are pleased to bring together expert panelists who will share with us some of the information that they have studied, some of the research that they have gathered on the causes and effects of this fast-growing, harmful problem that is affecting our children.

As I see it, and as the staff at the Center for Nutrition Policy and Promotion saw it, we could bring together researchers to discuss the scientific issues of obesity in children, and then look at the policy and program implications that would help us to turn what we consider a very serious health risk around, so that we can prevent some long-term health-related problems for children, long-term economic cost, and enhance the quality of life for our children.

We can no longer afford to sit back and watch this epidemic. The time is now to act on behalf of our children and bring people together in a dialogue and decide how working together we can make a difference for children. As I said, the time is now.

At least one child in five is overweight and that trend continues to grow. You obviously know this, or you would not have taken the time from your very busy schedules from all over the country to come to Washington today to listen to this discussion and participate and bring your issue to the table.

The question in your mind when you saw this announced was, "Why is USDA doing this? Why are they taking the lead on this issue?" Well, let me just tell you, FNCS--Food, Nutrition, and Consumer Services--has the responsibility for all of the nutrition assistance programs. That includes a food stamp program serving 9 million households, or 22 million people, of which 60 percent are children.

The WIC Program, serves 7.5 million people, and 80 percent of those are children. We serve 26 million school lunches every day to children in 95,000 schools across the country. We serve 6.9 million school breakfasts across the country, 2 million summer lunches, and we provide billions of pounds of commodities every day.

Further, we are responsible for providing nutrition information to all consumers through the Dietary Guidelines and the Food Guide Pyramid. Funded with a $40 billion budget and the stewardship for nutrition education, we can ill afford not to address this issue. After all, could we be the problem?

An Under Secretary who would stand here and say to you today, "Is it our problem? Should we be doing something about this? Can we turn it around?" As I said, you obviously agree with us because you are here representing industry, the health care profession, physicians, program managers, researchers, producer groups, dieticians, community people, scientists, and policy representatives.

I submit to you today this is a partnership about to happen. I will say it again. This is a partnership that is about to happen. If you did not plan to be a part of this partnership, I tell you, you have no business being here today because you just got drafted.

Our objective today will be to open this broad-based issue for discussion. We want to listen to the policy implications, and then we want to find out what are the next steps that the Federal Government should take. We, in our mission area at the Department of Agriculture, are outcome-oriented and action-based.

This is not just another symposium, and this is not just a panel discussion here today. We do plan to take some action, but we need to know what you think that we should be doing and what you think the next steps should be. This symposium is designed so that panelists will make their presentations, and there will be time for questions and answers.

You will have an opportunity to either ask a question or make a very brief comment; then we will have time for a 15-minute break and an hour for lunch. The break will be about 10:15, and the lunch will occur about 12:30, from 12:30 to 1:30. Because we have tried to put so much in this program, we are going to start on time and end these sessions on time. So, we will be monitoring the clock for you.

Our esteemed Secretary of Agriculture, Dan Glickman, is going to be joining us. When he comes in we will introduce him, and he will have time for his presentation, and you may have some time to dialogue with the Secretary. He is very, very interested in this symposium, and, obviously, more concerned about what you are recommending as actions that we should take.

We do have here today an interpreter if one is needed. I have been asked just to let you know that if there is no one here who needs signage, then we will not provide that service. But if there is someone here who needs it, please let us know and we will be able to provide that for you.

Now, it is my distinct pleasure and honor to be able to introduce a speaker whom many of you already know. Some of you may not, but I am honored to introduce the Surgeon General and Assistant Secretary for Health for the U.S. Department of Health and Human Services.

Dr. David Satcher was sworn in in this position on February 13th, 1998. He is the 16th Surgeon General in a line dating back to 1871. He is the first African American man to hold the post. He holds the rank of Admiral.

Dr. Satcher has special responsibilities for the Public Health Services, Offices of Public Affairs, Minority Health, Women's Health, the President's Council on Physical Fitness and Sports, the Office of Research Integrity, the Office of Emergency Preparedness, and the Office of HIV/AIDS Policy, among others. That, in itself, tells you that Dr. Satcher is a very, very busy man.

As the Assistant Secretary for Health, Dr. Satcher is a leader during a time when this country's major national health issues are reducing teenage smoking, health care reform, and increased childhood immunization rates.

Before assuming the job as Surgeon General and Assistant Secretary, Dr. Satcher was the Director of HHS's Centers for Disease Control and Prevention in Atlanta, and the Administrator of the Agency for Toxic Substances and Disease Registry from 1993 to 1997.

Dr. Satcher also served as the President of Meharry Medical College from 1982 to 1993, when then he was asked by Secretary Donna Shalala to serve as the director at CDC. Among Dr. Satcher's many awards are the 1996 American Medical Association's Dr. Nathan B. Davis Award; the John Sterns Award for lifetime achievement in medicine from the New York Academy of Medicine; and Ebony Magazine's American Black Achievement Award in business and the professions.

As one Tennessean to another Tennessean, Dr. Satcher, we are honored to have you join us today. I have to tell you. Before we got started with the final planning for this symposium, I went to Dr. Satcher and said, "Dr. Satcher, I need your help. Is this something you think we should be doing? If we do it, would you embrace it and would you help me?" He said, "Shirley, it is not only something I think that we should be doing, but I want to work with you on this and I want to take the lead role in doing some things for this effort."

Today we are delighted to have Dr. Satcher here with us. Dr. Satcher.

Remarks by David Satcher, M.D., Ph.D.,
Assistant Secretary for Health and Surgeon General

David Satcher, M.D., Ph.D., Assistant Secretary for Health and Surgeon General--Thank you very much, Under Secretary Shirley Watkins, for that very kind introduction, and thank you for such a warm reception. I am delighted to be here, delighted to be a part of this very important conference on childhood obesity.

I especially want to express my appreciation to Shirley Watkins and the Department of Agriculture for taking the lead in sponsoring such an important conference dealing with such a critical issue in this Nation at this time in our history, and also for being such a great partner. Because I agree, I think partnerships are really key to the future of public health especially. We need new and better partnerships. This partnership is certainly a very critical one.

Let me just say to you that this is a special year for us. Two hundred years ago, 1798, in Philadelphia, Pennsylvania, President John Adams signed the Act of Congress giving rise to the Marine Hospital Service, to provide for the health needs of merchant seaman. That was the beginning of a very important effort to respond to the health needs of the most vulnerable among us.

Over the years, we grew from a confederation of hospitals along the Eastern Shore, to today when there are 50,000 employees, including 6,000 commission corps people who report to the Surgeon General, making up what we now call the Public Health Service. So during this entire year we have been celebrating our bicentennial.

It is interesting. This is also the 50th anniversary of the World Health Organization, another very important effort in public health on a global basis. Some of you probably remember that this is also the 50th anniversary of the Framingham Study, one of the most important community-based, family-based studies in the world, started 50 years ago to look at the risk factors for cardiovascular disease.

We have learned a lot from the Framingham Study. We have learned that one's risk for chronic illnesses are not just due to the luck of the draw, but significantly related to lifestyle and behavior. So this is a very important year, and it is a very important year in which to have a major conference on childhood obesity.

What I want to talk about is childhood obesity, the public health challenge and response. Now when I think of the public health approach, I am reminded of a very often told story about a physician by the name of John Snow, who in 1854 in England was, along with other physicians and nurses, fighting an epidemic. It was an epidemic of cholera.

There were people dying right and left. They were being brought to the hospital and physicians were working around the clock. Nurses were working around the clock trying to take care of all of these patients with cholera. They were just being overwhelmed, as we often are during an epidemic.

John Snow was one of these physicians, and he did something that other people did not feel they had time to do. He stopped and took the time to talk to each patient to find out what they had eaten over the last few days and to find out where each one of them got their drinking water.

After he did this, he drew a map of the relationships and where water fountains were located and determined that the people who had cholera had one thing in common--they all got their drinking water from the Broad Street pump.

So, John Snow left the hospital. That was a bold thing to do. People were very upset. I mean everybody was overwhelmed, and he left the hospital and went out into the community looking for the Broad Street pump. When he found it, he was able to determine that the problem was that the water coming to the Broad Street pump was being incepted by a sewage line.

So, John Snow worked with the city council--and I am sure that was not easy--and others to get the helm removed from the Broad Street pump, and the cholera epidemic ended in 1854.

This concept of public health, of going out into the community and finding the Broad Street pump and the problems that are leading to health problems in our society is still with us today, and whether we are looking for the cause of an E-coli or 15787 outbreak, or whether we are looking for the causes of youth violence, this concept of looking at the community and defining the source of the problem is basic to public health.

And, certainly, with childhood obesity, that is the concept that I think is with us. That is why what is needed and what is being fostered here today is a community help approach to childhood obesity, not a health care approach, even though that is a very important part of the community or health approach, but it is only a part.

What are the four steps in the public health approach? First, in the public health approach, we want to have data. We want to do surveillance and determine the magnitude of the problem. We want to know how it affects different groups, different gender, and we want to look at it over time. The first step in the public health approach is one of surveillance.

The second approach--step--is analysis of risk factors. What are the things that lead some people to be more at risk for childhood obesity than others, or what led some people to be more at risk for cholera than others? So, analysis of risk factors is important, and I am sure you are going to hear a lot about that today.

The third step in the public health approach is to try interventions to prevent a problem and to evaluate the success of those strategies, the prevention strategies or prevention effort. Now, if you are dealing with an infectious disease, it might be developing a vaccine and trying to determine if that vaccine actually works in preventing smallpox, or polio, or measles.

If you are dealing with violence, it might well be to look at what is happening at home and in the schools to see if conflict resolution courses will help to prevent youth violence. But it is looking at a prevention strategy and evaluating it as you try it in smaller populations.

And then once you determine that something actually works on a small scale, the fourth step in the public health approach is to implement it on a larger scale. I contend that that is where we are today as we look at childhood obesity.

We are actually trying to determine what actually works to prevent it. I think we have a pretty good idea about the risk factors. We know the role of physical inactivity, poor nutrition, even the role of genetics to a certain extent. We know a lot about risk factors, even though the research continues and it must continue. We know a lot.

I think the critical point is what can we do to prevent childhood obesity? You are going to hear about some strategies today. Let me just say that how do we define obesity in this country and why do we call it an epidemic? We together have agreed to use something called the body mass index, which, in addition to looking at one's weight, also looks at height and related parameters.

Up until very recently, if a person had a body mass index of greater than 27, they were said to be overweight. Recently, we decided to change that to 25. So, a person is defined as overweight if the body mass index is over 25. If it is 30 or above, they are called obese.

So, we are using body mass index in public health to define overweight and obesity. Using that, the reason we say that this is an epidemic is because we tend to use the word "epidemic" lightly. In public health we define an epidemic as any occurrence of a problem that is greater than the usual or the expected.

So, when we have a massive outbreak of influenza--this year, for example, 50,000 people died from influenza, that must be due to an epidemic. Because even though we have a lot of cases of influenza, the death rate still is around 20,000 and above. So, we look at the numbers.

The critical thing is that it depends upon what you usually see. And so, when somebody says that if you had one case of rabies in a human, in a community, that would be an epidemic, it is true, because we do not expect one case of rabies anymore. So, an epidemic is based on what you usually expect.

Now why is childhood obesity an epidemic? Because in the '70s when we did the NHANES Survey, for example, I think about 7 percent of children were overweight. By the '80s, when the NHANES was done, leading up to 1991, that figure had increased to about 11 percent.

In the most recent NHANES Survey, the figure is closer to 12 to 14 percent. So, it is very clear that what we have is an increase in the number of children who are obese--who are overweight and obese. So we do have an epidemic, based on what we would expect to see, in terms of childhood obesity.

We also have an epidemic of adult obesity. We should point out the highest rate of obesity among adults in our history, and the highest rate in any industrialized country, so we have a real problem with obesity. Well, so we know it is increasing.

We know, for example, that girls are at greater risk for obesity than boys. We also know that minorities, or African American and Hispanics, are at greater risk for obesity in childhood than their white counterparts. We do not know all of the reasons, but I think you are going to hear a lot about some of the parameters for poor nutrition and physical inactivity today.

What does it mean to be obese? We have had some debates going on about whether the BMI should be 25 or 27. The interesting thing is that the reason we feel so comfortable moving from 27 to 25 is that, number one, we know that, in addition to it being consistent with dietary guidelines, and consistent with the World Health Organization guidelines.

We also know that if you look at the relationship between the BMI and life expectancy, that there is a significant difference as you move from a 25 to a 27. If you compare us with other countries like Canada, Japan, Sweden, and Switzerland, then they have higher life expectancies and significantly lower BMIs in adults. So, there is a relationship here that is very important.

We also know that even in childhood, obesity is associated with an increased risk of hypertension, hyperlipidemia, and Type II diabetes. I was meeting with some of our colleagues from the Indian Health Service last week in my office.

One of the things they came to relate to me was that, increasingly, they are identifying on the reservations children with Type II diabetes as young as 4 years of age. Now we always thought of Type II diabetes as being an adult problem generally related to obesity.

What they are telling us is that as we see an increase in childhood obesity, we are also seeing the earlier occurrence of Type II diabetes. So, we are not just talking about something that is an abstract phenomenon. We are talking about something that relates specifically to a definable public health problem.

Well, let me close by looking at the role of this community health system, which I think is critical for our future in many ways. One way, of course, is in dealing with childhood obesity. I want to share with you four of the Surgeon General's evolving priorities, because they all relate to this problem.

We have been talking about these evolving priorities around the country, and we have been listening and getting feedback from people. One of our priorities is that every child should have an opportunity for a healthy start in life, every child. We have said that means that a child needs parents who are ready to be parents and to take the responsibility of parenthood.

A child needs a safe pregnancy including access to quality prenatal care and freedom from exposure during pregnancy to tobacco, to alcohol, to crack cocaine, and to viruses like the HIV virus that causes AIDS. A child needs those things in order to have an opportunity for a healthy start, and too many children are not getting them.

The third thing that a child needs in order to have an opportunity for a healthy start is a safe and healthy environment in early childhood, those early years of life, and that means good nutrition.

As you know, one of the things we are struggling with is to get more women to breast-feed, because we know that breast-feeding is the best way to assure good nutrition, especially in the first year of life. So, that is a major struggle that we have going on now, but any effort to get every child to have a healthy start in life.

But also, I think all of us know that eating habits begin early in life. They begin right there in the home. Diets that are too high in fat, too low in folic acid, vitamin C, or what have you, all of those things--too low in calcium--those diets begin early in childhood. So, if every child is going to have a healthy start, nutrition is critical.

The second priority that we have been discussing throughout this country is the promotion of healthy lifestyles. Without dwelling on it, let me just say that we have been discussing four themes as critical for a healthy lifestyle.

One is physical activity, moderate physical activity. As CDC said in the 1996 Surgeon General's Report on physical activity, if we can get Americans up and moving 30 minutes a day, 5 days a week--walking, jogging, swimming, dancing, aerobic dancing, gardening--30 minutes a day, 5 days a week, we could make a significant difference in risk for cardiovascular diseases and Type II diabetes.

I have to tell you that less than 50 percent of Americans are doing that. When it comes to children, the Youth Risk Behavior Survey shows that not only are about 25 percent of children taking physical education, especially teenagers, but also this is the most inactive generation of children and adolescents we have ever had in our history.

And, of course, it has a lot to do with what else goes on in the homes and the communities, which you will hear a lot about. So, physical activity.

Nutrition, is a second component of promoting healthy lifestyles. We have been talking, along with the Department of Agriculture, about five servings of fruits and vegetables per day. We have been talking about grain. We have been talking about diets that where the calories are consumed from no more than 30 percent fat, no more than 10 percent saturated fat. That is what we have been talking about.

Now, there is a lot of interest recently in folic acid, for example. CDC has had a major program, in terms of preventing neural tube defects. But also in recent years, it is very clear that folic acid may play a major role in preventing cardiovascular diseases, and even some forms of cancer, colon cancer. So, all of those things we are looking at.

It is interesting, as people talk about the difficulty of folic acid and the need for supplementation, that if we really could get Americans to consume diets consisting of five servings of fruits and vegetables per day, and five to six servings of grains, etc., most of our diets would be very close to what is needed. I am not knocking vitamin supplements, but I am saying that we would be in pretty good shape.

Another priority of the Surgeon General is mental health. And, again, just briefly, we are concerned that the environment for mental health in this country is too often one of blame and stigmatization, which means that people who need help often do not feel comfortable coming forward and asking for it or seeking it.

So, our mental health problems tend to play out in the streets of America, or in the homes, or in the schools, when somebody brings a gun to school and shoots classmates and teachers. Too often, though, our mental health problems play out in the wrong arenas. If that is going to change, we need to change the environment.

Two weeks ago, we had a conference in Reno, Nevada, on suicide prevention. Out of the conference will come a strategy, a national strategy for preventing suicide. One major component of that strategy will be to change the environment from one of blame and stigmatization for mental health problems, to one of caring and support.

Another Surgeon General's priority is to eliminate disparities in health based on race and ethnic groups. We are looking at six areas: cardiovascular diseases, diabetes, cancer, infant mortality, immunizations--both childhood and adult, and the HIV/AIDS epidemic.

I can just tell you that as you have already heard, obesity varies by race and ethnicity. It is no accident that diabetes is more common in African Americans, Hispanics, and American Indians. Obesity is also more common.

While I am not saying that is the only reason, certainly, if we could get a handle on the problem of obesity starting in childhood, we could reduce risk for cardiovascular diseases, and diabetes, and some forms of cancer. So, we have to look at that as we implement our strategy to eliminate disparities in health.

If we are going to succeed, we need the home, the schools, the broader community, the work place, all working with us, in terms of trying to combat the problem of childhood obesity. I will just tell you as I close what some students told me in Morocco a few years.

I was there and that was my first trip as Director of CDC, and I was attending the 8th International Conference on AIDS for the continent of Africa. This was the first time that they had brought teenagers to this conference, because they recognized that increasingly, as we do, AIDS is becoming a problem of youth.

Under age 25 accounts for 50 percent of the new cases of HIV, so teenagers were there. They were attending the meetings. They were pretending to be reporters and coming to the press conference. When they found out that the new Director of CDC was there, they insisted that I come over and have a roundtable discussion with them and I did. I never will forget.

It was on a Wednesday afternoon, and the students just really drilled me with questions. They wanted to know when I thought we would have a vaccine for AIDS. When will we have a cure? Is America concerned about AIDS globally, or just among Americans? They hit me with a lot of questions.

As I listened to them, I realized that these teenagers reminded me a lot of teenagers in this country. So, I decided to ask them a question. The question I asked them was: Why is it that teenagers tend to engage in such high-risk behaviors?

I mentioned to them that in our country 3,000 teenagers become smokers every day, despite all that we know about smoking and health; that at the time violence was causing an increase in homicide from year-to-year. Luckily, now we have gotten it going in a different direction.

I talked about sexual behavior and responsible sexuality. I said, "Why do teenagers engage in such high-risk behavior?" They responded by saying, after looking at each other for quite awhile, "Dr. Satcher, have you heard it said that in Africa it takes a village to raise a child?"

I thought for a minute, and I said, "Yeah, I have heard that somewhere." They said, "Well, will you tell us that as Africa becomes more urbanized, more like America, where is our village? Where is our community? Where are the people who used to care about children, not just their children, but all children? Where are the people who used to care about safety and clean environment?"

I could hear teenagers in this country asking the same questions. "Where are the people who used to keep the schools safe? Where are the people who used to keep the communities safe, so that you could walk in the street and not worry about being shot? Where are the people who used to protect the environment and assure that water and foods were safe? Where are the people who used to care about children?"

I think that is the question that we are facing today. Where is our community? The only way we are going to get a handle on childhood obesity is to answer that question, and together I hope we can regenerate the kind of community that can in fact allow and motivate physical activity and proper nutrition, and also, the general environment where people aspire to good health and healthy lifestyles. Thank you very much.

MS. WATKINS: Dr. Satcher, thank you so very much. We are challenged to find that village, as the children ask, "Where is our village?" I think we can find that village and bring it back to children.

Dr. Satcher has to leave, but there are plenty people here who are taking notes on his behalf, so that he will know what your final discussions are here today, and what he is going to be able to do as we work through this process.

When I started talking about trying to pull together this event and I went to our Center for Nutrition Policy and Promotion Executive Director, and said, "Dr. Anand, how can we get this done; and how quickly can you move this; and can you find speakers from around the country to do so?" He said, "I think I can get it done and I think I can find lots and lots of people, and there are some wonderful experts around this country that we can bring in."

We have been successful in bringing them. I would like to introduce them very quickly. Dr. William Dietz, Dr. Michael Goran, Dr. Leann Birch, Dr. Christine Williams, Dr. Tom Robinson, Dr. Donna O'Hare, Connie Evers, Dr. Barbara Moore, Dr. Don B. Franks. We have one program change. Lynn Parker was unable to be with us today because of an illness, and we are delighted that Dr. Laura Sims agreed to join us today. So, she will be making that presentation.

And now it is my distinct honor to present our Executive Director for the Center for Nutrition Policy and Promotion, Dr. Rajen Anand. Dr. Anand came to USDA from UC Davis, where he had gotten his Ph.D. at UC Davis. When he came to us, he was the Professor and Chair of the Physiology Department at Cal State Long Beach.

Dr. Anand served as the Associate Executive Director for the Center from 1993 until 1997. We are delighted to have him now as the Executive Director for the Nutrition Policy and Promotion Center. Dr. Anand.

SCIENTIFIC PRESENTATIONS

Introductions by Rajen Anand, Ph.D.,
Executive Director, USDA Center for Nutrition Policy and Promotion

DR. ANAND: Thank you, Shirley. You are probably going to hear this many times this morning, that in this country at least one child in five is overweight. The number of overweight children continues to grow. Over the last 20 years this number has increased by more than 50 percent. The number of extremely overweight children has nearly doubled.

As Shirley mentioned, this conference is the first of its kind sponsored by USDA to address this epidemic problem. One of the foremost missions of the Department is to end hunger. At USDA we say, "Hunger ends when caring begins." But caring means more than just feeding the hungry children.

It means to do everything possible to ensure that other children grow up to become healthy and productive citizens of tomorrow. Under the very able and visionary leadership of our Under Secretary, Shirley Watkins, we have a new paradigm. That paradigm is to eliminate hunger, but at the same time improve the health of all people by providing them a healthful diet that meets dietary guidelines.

This event is a part of a continuing effort to find ways for improving the well-being of children. This morning we are very fortunate to have a very distinguished panel of experts, who will explain to us the contributing factors that increase the likelihood of children becoming overweight and discuss possible preventative maintenance.

In the afternoon, we have another distinguished panel of experts who will deal with the perspective of potential policy obligations and recommendations. After each panel, there will be time to make very brief comments or ask questions.

Presentation by William Dietz, M.D., Ph.D.
Centers for Disease Control and Prevention

Childhood Obesity: The Contribution of Diet and Inactivity

William Dietz, M.D., Ph.D., Centers for Disease Control and Prevention--Thank you, Dr. Anand. Under Secretary Watkins, fellow speakers, and guests, it is a great pleasure to be here today with you, and we look forward to the opportunity of the CDC working closely with the USDA to begin to address this widespread problem.

I would like to begin this presentation with a focus on just how prevalent this problem has become, who really is at risk from this problem, and what the nature of the origin of childhood obesity is in the United States. The latter part of my talk is going to focus more specifically on what we understand about dietary practices, practices in activity, and practices in inactivity.

The message here is that there is a very large research agenda before we can begin to identify specific behaviors related to obesity, and despite the fact that we do not understand the specific behaviors that should be the target of our preventive efforts, that we do know something about the general areas on which we should focus.

As Dr. Satcher said, this problem has increased rapidly in the United States. You can see here these are prevalence data beginning with the National Health Examination Surveys in the 1960's and moving up through NHANES I, NHANES II, and NHANES III in 1988 through 1991.

Notice that in both ethnic groups, white and black, there has been a very dramatic increase in the prevalence of childhood obesity, with the most dramatic changes occurring in the last 10 years, between NHANES II in 1980 and in NHANES III.

As Dr. Satcher pointed out, this problem is much more prevalent in African Americans and other minorities than it is in Caucasians. It is also of interest that although the mean body weight in the pediatric population has increased, the median body weight has not changed.

This is shown in the slide from Katherine Flegal of the National Center for Health Statistics. This shows the mean difference in percentiles between the NHANES I in the 60's and in the NHANES III in 1990.

Notice that in the lower percentiles, there has been no change in the BMI. All of the changes in the prevalence of obesity have occurred above the 50th percentile; that is, the upper half of the population is getting fatter.

Now, there are two potential explanations for this. Either 50 percent of the population has the genes that make them susceptible to obesity, and the environmental factors are acting on this 50 percent; or 50 percent of the population is exposed to specific factors that are driving obesity that are not shared by the rest of the population.

Another very interesting observation, again, these are data from Katherine Flegal, at NCHS, is that the actual weight change in the population is not accounted for by major caloric imbalances. For example, these data are from 10-year-old males and females studied in the first National Health Examination Survey and then in NHANES III.

Notice that over this 30-year period there has been an average weight change in the population of about 3 pounds. If one assumes that these changes are related exclusively to changes in body fat deposition, the daily caloric imbalance necessary to produce this weight change over a 30-year period is about 1 calorie per day.

Now, 1 calorie per day is not an imbalance that any of our current methodology is likely to detect. This may not be an accurate figure, but it is not very far off, and neither measures of energy expenditure or activity, nor measures of dietary intake will detect the small imbalance that we show here.

I think this observation emphasizes that we have to be much more sensitive to patterns of energy expenditure, patterns of activity, and patterns of food intake, because it is unlikely that we are going to identify such a small specific caloric imbalance.

Notice that even in the population which has had the most massive weight increase over the last 30 years, that is, middle aged females, the weight change of 18 pounds over this period can be accounted for by about a 13 calorie per day imbalance. So, the small differences that have occurred in the population may well be what is driving this epidemic.

Now, if we are serious about prevention, on whom should we focus? What are the periods of risk in childhood for the development of obesity? These are data from Bob Whittaker's study published in the *New England Journal*.

This is a longitudinal study of young adults in the Group Health Program in Seattle, whose parents were members of Group Health, and, therefore, these children were born in the Group Health Program. These data made it possible to examine the risk of overweight when children were young up through adolescence, while controlling that risk for the influence of parental obesity.

The odds ratios in this column are the odds ratios of childhood obesity persisting into adulthood, independent of the effect of parental obesity. In this column is the effect of parental obesity on the likelihood that obesity will persist into adulthood, independent of the effects of childhood obesity.

The first thing to point out is that as one ages, the likelihood that obesity will persist into adulthood increases quite dramatically. The highest risk is in adolescence. It is also important to point out that if you have a 1- to 3-year-old overweight child, the likelihood that that obesity will persist is not significantly increased. However, if this child has overweight parents in early childhood, there is a very, very high likelihood that that child will go on to develop adult obesity. The risk of parental obesity on the persistence of childhood obesity declines as that child ages.

These data suggest that the initial focus of our preventive efforts should be on the obese parents of the young child, regardless of the weight status of the child. But, increasingly, in order to effectively prevent adult disease, we are going to need to focus on the child and adolescent who is overweight, regardless of the weight status of their parents.

Only about a third of adult obesity begins in childhood. However, the obesity in adults that began in childhood tends to be more severe, perhaps associated with adverse effects, and, therefore, may contribute a disproportionate percentage of the complications of adult obesity.

Now, I would like to turn to what we understand about the food, activity, and family environment on the likelihood of childhood obesity. About 10 or 15 years ago we published a paper that looked at the effects of physical environment on obesity and showed that the region of the country, the season of the year, and the density of the population all had independent effects on the likelihood of childhood obesity.

We replicated this analysis in NHANES III. Interestingly enough, the country has become much more homogenized since the 1960's. No longer is there a regional effect or a population density effect on childhood obesity. Just why this has happened is an issue on which it is interesting to speculate, but no longer do we see these regional differences, suggesting that whatever factors are affecting childhood obesity are now operating countrywide, rather than locally or regionally.

The major variables within the environment are within the family, and Dr. Satcher and Under Secretary Watkins both mentioned the issue of ethnicity. We know that obesity is more prevalent among African Americans, Mexican Americans, and Native Americans. What we do not understand are what the factors are that pose a particular risk for these populations. Socioeconomic class operates quite distinctively among these various groups. For example, years ago we showed that there was a direct relationship between socioeconomic class and obesity. The wealthier your parents were, the more likely you were to be overweight. That, too, has changed. Now the relationship of socioeconomic class to obesity is an inverse relationship, but only among Caucasians. The effect of socioeconomic class on obesity in both African American populations and Mexican American populations is flat. There does not seem to be the same consistency of this relationship that once existed.

We have already mentioned parental obesity. Family size is inversely related to childhood obesity. Children in larger families have a lower prevalence of obesity than children in smaller families.

But, finally, whatever effects the family environment has on obesity must operate through its effect on diet, activity, and inactivity, and we are going to consider that now.

As I said, factors related to the onset of obesity have to affect energy balance. The first place to look is in dietary intake. This addresses dietary modifications that perhaps are related to obesity, and may in fact represent the appropriate focus for prevention efforts.

The first and most popular area on which to focus is fat intake. Fat intake is quite an interesting phenomenon, because as you all know, fat intake was quite high 10 or 15 years ago and has declined substantially over the last 10 to 15 years

Despite the decline in fat intake, the prevalence of obesity in both the pediatric and adult population has increased substantially. Now we know from our experience that with other nutrition interventions that changes in the environment, the food environment represent very effective preventive approaches. For example, the addition of iodine to salt has been instrumental in reducing goiter. The addition of fluoride to water has been very effective at reducing dental caries. I would suggest that the reductions in fat intake over the last 15 years represent an environmental modification and to treat obesity that has failed. The other possibility is that our methods are not sensitive enough to detect the real changes in fat intake, if they have occurred at all. That is certainly a competing hypothesis.

Eating patterns have changed substantially over the last 30 years. This from *The New Yorker* shows changes in food preparation from 1934 through 1994. In 1934, food was prepared by scratch in the home. This was a labor intensive process and exclusive control of the composition of food was in the hands of the parents. In 1954, the advent of frozen food began the process of liberating women from the exclusive preparation of food and made a wide range of foods available for the first time through all periods of the year. The seasonal specificity of food intake was eliminated.

In 1974, began one of the most important developments in interactions between parents and children about food. That is the advent of microwaveable food. That had two effects on children. The first was that the control of food intake and the preparation of that food was no longer at the discretion of the parent. And, secondly, for the first time, children had the capacity to select their own foods and prepare it. Although one could argue that we do not know its effects, this represents a very substantial shift in parent/child interrelationships around eating.

In 1994, this process has changed even more dramatically with the advent of take-out food. Today take-out food accounts for over 30 percent of a family's food expenditures on a daily, weekly, or annual basis; across all spectrums of socioeconomic class.

Now, this I think is another very significant phenomenon that may not be adequately captured in our current dietary methodology, because food purchased outside the home often has a higher caloric content than food prepared in the home. Portion sizes tend to be substantially larger, and this may confound the dietary methodologies that we have.

The final area on which I would like to focus is the elimination of specific foods. The Food Guide Pyramid has provided a guide to eating. This is what the pyramid looks like in the United States. There is increased food consumption from the top of the pyramid and less food consumption from the bottom of the pyramid.

Now, again, this is a change in the dietary pattern. We have yet to demonstrate that this shift is associated with either the onset of childhood obesity or its persistence, but it represents a logical candidate because these foods tend to be of lower caloric density and one could argue that regulating food intake is more appropriate under those circumstances.

Decreased physical activity is also a critical part of the energy balance equation. It is evident that the decline in physical activity has already occurred by the time adolescents enter high school. At ninth grade about 70 percent of females and about 50 percent of males do not participate in vigorous physical activity, and that level declines substantially in girls as they age.

We have not yet demonstrated that vigorous physical activity is the factor associated with reductions in childhood obesity. As Dr. Satcher said, the recommendations of the CDC are for 30 minutes of moderate physical activity five times a day.

But these observations do raise the point that the last safe opportunity for vigorous physical activity, that is, physical education courses in our schools, has gradually eroded over the last 15 years. The opportunities for safe physical activity represented by schools are those that we have to recapture in order to restore physical activity levels of our population.

Often we accept leisure means of transportation to get to an opportunity for vigorous physical activity. An analogy here is that when I left Boston most of the parents in my clinic of overweight children were driving their children to school, despite the fact that schools were only several blocks away.

Now, one tends to point the finger at parenting practices. But I would suggest that this may not be a parental problem, as much as it is a community problem, because the absence of safe streets and safe means of getting to school may be one reason that more and more parents are driving their children to school. So, what appears on the one hand as a simple problem of activity may in fact reflect a problem of community organization and safety.

The final focus is on increased inactivity. As Pam Ching indicates, there are several bodies of data now that suggest that activity and inactivity represent independent and distinct domains.

For example, this is hours of television per week along this axis and quintiles of METS. That is energy expenditure per week.

Notice that the highest risk of being overweight among male health professionals is among the group that is both inactive, as measured by physical activity, and participating in the greatest amount of sedentary behavior. We showed several years ago, along with Steve Gortmaker, that the prevalence of obesity was directly related to the hours of television viewed on a daily basis.

Since 1990, this relationship existed but became even steeper. Television viewing is not a single behavior. It represents both inactivity and is also associated with altered patterns of food consumption. The more television a child watches, the more likely that child will consume the foods advertised on television, and the more likely those foods are to be foods of high caloric density. Television is a surrogate measure for both inactivity and diet.

What is also interesting is that inactivity, diet, and other health risk behaviors now co-vary. This shows patterns of healthy food choices, activity scores, and weekly smoking prevalence. Notice that in both males and females, there is a clustering of all three of these behaviors. The children who are inactive also are those who have the lowest frequency of healthy food choices and are also those who are more likely to smoke.

These data suggest that television viewing may be a marker for some of these other health practices and raise the possibility that a reduction in cigarette smoking might be achieved by improving activity and healthy food choices. I think this is an exciting area for future research and one which we would, I think, very much encourage.

The final point that I would like to make is that most of what we are going to talk about has to do with the knowledge base. There still are major challenges to develop a body of research so that we can begin targeting individual behaviors.

I think we have shown that a focus on dietary patterns or patterns of inactivity may be helpful, but specific behaviors remain to be specified. Hopefully, this afternoon we will begin to hear about the social strategy necessary to prevent obesity.

This is clearly going to involve, as both Under Secretary Watkins and Dr. Satcher said, a focus on communities. Only then will the political will to make the changes necessary at the community level begin to affect the diet in schools, the opportunities for physical activity, and to promote healthy communities.

Introduction of Dr. Michael Goran

DR. ANAND: Our next speaker is Dr. Michael Goran. Dr. Goran is Professor of the Department of Nutrition Sciences and Director of the Division of Physiology and Metabolism at the University of Alabama at Birmingham, and also serves as Associate Director of the UAB Obesity Research Center. He obtained his Ph.D. in biochemistry from the University of Manchester in the United Kingdom and did post-doctorate training in human energy metabolism.

Dr. Goran's major research since 1991 has focused on childhood obesity and health risk. This research has established a body of work, which provides new insights in the regulation of energy metabolism and its relation to disease in a diverse group of children.

Dr. Goran will speak today on Obesity and Health Risk in Children. Dr. Goran. After Dr. Goran's speech, we will have a 12-minute break.

Presentation by Michael Goran, Ph.D.
University of Alabama at Birmingham

Obesity and Health Risk in Children

Michael Goran, Ph.D., University of Alabama at Birmingham--Thank you very much for the introduction. I would like to thank the Department of Agriculture and Under Secretary Watkins for taking a lead on this important venture and for drafting me into service and I am ready for action.

I would also like to thank Dr. Satcher for giving my talk. I do not think I have very much new to say this morning, but I guess it does not do any harm to repeat things. So, I am going to talk about obesity and health risk in children, and, of course, echo the theme of the day which is, "It is time for prevention."

I would just like to repeat some of the statistics that have already been mentioned. These are some of the demographics, or some of the prevalence numbers for obesity in Birmingham school children, from a sample of six-and-a-half thousand school children.

As you can see, these numbers show quite apparently the epidemic of obesity among children. Also, I want to point out these numbers are much higher in our school children who are African American. So, for example, comparing African American to Caucasian girls you can see at both age 5 and age 10, there is a dramatic increase in the prevalence of obesity as defined for an ideal body weight about the 120th percent.

This documents quite clearly secular increase in body weight among children. I do not think anybody has mentioned this, so I may be saying something new. This is data that was accumulated by Freeman from a variety of studies, 10 different cross-sectional surveys that summarized, as you see, over 25,000 measurements of body weight in over 10,000 children.

What they saw was that the mean body weight increased secularly each year by .2 kilograms, and that is independent of age and height. So, this shows quite clearly that as years go by, children at a given age are becoming heavier and heavier.

Next is the persistence which Dr. Dietz just mentioned and using logistic regression model, this just graphically shows that the persistence of obesity into adulthood increases quite dramatically as children go through the life span, so that by 10- to 13-years-of-age, the likelihood of persistence of obesity into adulthood is 70 percent.

Other groups, such as the World Health Organization, therefore, have already recognized obesity as an epidemic, not just in this country, but globally. This is a very interesting document that was released by the World Health Organization that outlines their plan for preventing and

managing the global epidemic. So, this epidemic of obesity is recognized throughout all levels of government, national and globally.

So the question today is, if this is the Mona Lisa of this century, given the increased prevalence, given the increased persistence, what would the Mona Lisa look like in the next century? The question is, would it look like this?

But on a more serious note, even though it would seem that the clock is ticking, and that this is a high likelihood of occurring, the question then is what are the health risks of this outcome? Is this just a concern of how people look, or is this really a concern of people's health?

I would like to review for you some of the important health data that relate to the outcome, not just in adults, but in children. As Dr. Satcher mentioned, already in childhood there is very strong evidence of health risks being apparent with obesity.

So, this lists briefly some of the more obvious health risks of obesity that are apparent in children, including cardiovascular disease, altered lipid profile, and diabetes, especially Type II diabetes. I will show you some of that data.

Of course, there are psychosocial concerns that are related to increased body weight, such as self-esteem-related eating disorders and some social consequences that are quite apparent. Early maturation occurs with obesity. There are some documentation of other outcomes such as orthopedic problems.

Anyway, obviously, there are enormous economic costs associated with obesity that have been documented recently. This outlines a very dramatic problem, and it has been mentioned that Type II diabetes normally starts off as a disease of adulthood related to obesity, is now becoming quite apparent even in childhood.

This is a study that was done in Cincinnati in over a thousand children 0- to 19-years-of-age. What this showed was prior to 1982, 4 percent of all cases of diabetes diagnosis were NIDDM. So they are looking at how much of the diagnosis of diabetes in children is NIDDM and how much is Type I diabetes--very few cases before 1982.

By 1994, however, this increased dramatically such that 16 percent of cases of diabetes diagnosed were actually NIDDM. What this translated to was an incredible increase in the incidence of NIDDM in children, shown here an increase in 10-fold.

Now, what were the risk factors? Obesity was one of the major risk factors for this diagnosis. Additionally, the highest prevalence was in African American females. So, three very obvious risk factors--obesity, African American, and gender--females being of incredibly high risk.

This is just one example. This is not just occurring in Cincinnati, this is occurring nationally. As the prevalence of obesity increases, there is increased likelihood of this disease being diagnosed.

So what is the mechanism for this? Why does obesity have such terrible health consequences? The hypothesis currently relates to body fat. But, more specifically, it relates to a specific depot of body fat, which is hidden deep inside the body and you cannot see it in the mirror, and you cannot pinch it and feel it, because it is visceral fat.

This is a CT image of the abdomen in a 7-year-old child. This is the umbilicus. The white area here is subcutaneous fat. That is fat around the abdomen. Inside the abdominal cavity those other small islands of fat, that is visceral adipose tissue, or intra-abdominal adipose tissue.

This is a 7-year-old child who is a bit more overweight. You can see much larger depots, not only of the visceral fat--excuse me--not only of the subcutaneous fat around the periphery, but also inside the abdomen there are greater depots of visceral fat.

Now, the mechanism in adults for Type II diabetes says that increased accumulation of visceral fat leads to disturbances in glucose and lipid metabolism because visceral fat is much more metabolically active and it drains directly into the hepatic portal vein and hits the liver, and gives the liver a much higher exposure of the breakdown products like fatty acids.

Now children, as you can see here, are not immune from this problem. Visceral fat begins to accumulate in children very early in life. We have been studying this phenomenon for quite some time trying to look at the pattern, the risk factors, and how this relates to other measures of body fat.

So, this graph is a little complicated. But it shows in rank order 101 children who we measured visceral fat content using those imaging techniques. You can see some children have very low amounts of visceral fats, and some children have very high amounts of visceral fat.

I am more interested in what causes this, what it leads to, what the risk factors are. The one thing I want to point out is the lack of relationship between visceral fat and general adiposity.

In this graph, we plotted the same children in the same order; only this time we plotted them for percent body fat. So, if you look from top to bottom, that is the same child. So, for example, these children here, who have a percent body fat of around 40 percent, have some of the lowest amounts of visceral fat.

In the other end of the spectrum, you can see that there are some children, like number 90, number 85, who have a percent body fat of only around 20 percent, but have a very high level of visceral fat. So, at the end of the day when we look at the relationship between visceral fat accumulation and percent body fat, there actually is not much of a relationship.

So, the point is just to say that just by looking at children and seeing an increase in body fat, that does not: (a) necessarily mean we have increased or decreased visceral fat; and (b) it does not necessarily mean you have an increased health risk or not.

So, our goal is not only to identify the causes and treatments for obesity, but, more specifically, to determine which are the children who are overweight are at greatest risk for accumulation of visceral fat, but, more specifically, are at greatest risk of increased health.

There is plenty of evidence and more and more is beginning to accumulate that relates the accumulation of visceral fat and disease risk in children. Epidemiological data from the Bogalusa Study show quite clearly a correlation of about .3 to .4, between central fat this time measured crudely using skinfolds and blood lipids, as well as fasting insulin, and other studies that have measured visceral fats, such as those of Brambilla and Caprio, have shown clearly a relationship between the amount of visceral fat that exists and health risk factors such as fasting insulin and fasting lipids.

I want to show you some of our data from our ongoing studies that have been looking at this. These two graphs here show the response to an oral glucose tolerance in Caucasian children in yellow and African American children in red.

We are looking in these two groups to see whether the risk factors are the same, and to see whether the translation of obesity or the impact of obesity in these two groups of children on health risk is similar or not. What we see is kind of a difference.

When we look at glucose that are very similar, the African American children become a little more hyperglycemic during the response. But the more dramatic differences down here, looking at the insulin response, and you can see the African American children have a much higher insulin response in response to this same glucose.

Furthermore, we looked at the relationship between this insulin response measured by the area under that curve and adipose measures, and it turns out that the adipose measure that is most significantly and independently related to this insulin response is visceral fat, intra-abdominal adipose tissue.

So, this is again the depot body fat that was causing these children to be hyperinsulinemic. And, of course, the greater of the incremental insulin area under the curve, the greater the risk for diabetes later in life.

Furthermore, what is interesting here, as you can see in red, the African American children have an elevated response that is independent of visceral fat. So these lines are actually parallel, meaning that, first of all, the increased insulin response, the increased risk for diabetes among African American children is not really explained by differences in visceral fat, because at any given level of visceral fat the African American children have a much elevated response.

So there are other factors at play that we do not yet know about, in addition to adiposity, that increase these risk factors among African American children. Now I would like to draw these models and we do not come without error or without flaw.

But this, at least for the moment, is a working model that is consistent in children and in adults that explains this central rule that intra-abdominal adipose tissue or visceral fat plays in orchestrating the response between diet, lifestyle, obesity, and health risk.

Intra-abdominal adipose tissue or visceral fat is influenced by modifiable factors such as diet, such as physical activity, and such as overall obesity. But it is also influenced by nonmodifiable factors such as the hormone environment, such as gender, and such as ethnicity.

For example, African American children have less visceral fat than Caucasian children. However, they have greater risk factors, so this relationship is quite complicated. Indeed, the modifiable and nonmodifiable factors input to intra-abdominal adipose tissue and then this, in turn, through mechanisms that are not entirely clear to us yet, have influences not only on lipid metabolism but glucose metabolism, and that is increased risk for diabetes and heart disease.

Now, these modifiable factors that we have heard about this morning, such as diet and physical activity, are turning out to be key variables and there are several lines of evidence to support that. Just a couple of quotes that allude to this:

> "Although genetics has a modest influence on obesity, by far the largest amount of variance in body weight is due to environment."
> "Genetics permits a person to become obese, but environment determines if a person becomes obese."

These concepts explain why there is a lot of growing focus on changing the environment to induce a change in obesity and health risk.

A lot has been mentioned about physical activity, and this is repetitive. But this right here overviews some of the concerning statistics relating to physical activity in children and the role it might play in the increased visceral fatness, and the increased general fatness, and the increased health risk among children.

Clearly, environmental and cultural changes during this century have dramatically decreased the need to be physically active. The priority to be physically active, because T.V. and computers are available, and also environmental changes have created concerns over safety.

All of these factors have resulted in a tremendous secular reduction in physical activity, which has not really been empirically documented, but I think it is obvious to us all that not only are adults, but the children of today are much less physically active.

There are plenty statistics that point to the same direction. Just a few here: 20 percent of children in the U.S. do not get more than 2 hours of vigorous physical activity per week; 67 percent of U.S. children watch greater than 2 hours of television per day; less than 36 percent of U.S. children get physical education on a daily basis.

That is not the only concern. Because another concern is that studies have shown that even during physical education in schools, the majority of time is spent being physically inactive. To me this is the one area that I think is the heart of the matter--promoting physical activity back into the schools.

The CDC and Health and Human Services have recognized this problem. This is the cover of the Surgeon General's Report, which I think is a wonderful document, and outlines some of these problems. It gives the recommendation that people of all ages above 2-years-of-age should have 30 minutes of physical activity on most days of the week.

There are other recommendations. I am not so sure recommending all children to be active 30 minutes per day is really that useful or practical. It seems like the greater need for children are some of the policy changes that have been recommended in various documents such as in the WHO document, and by another document produced by the CDC that outlines some very clear policy needs at the school and community level to promote physical activity and health, physical education activities inside and outside of school hours. These I think are the greatest needs.

Ever wondered what happened to school recess? It seems to be a disappearing concept. I think one of the problems may have been when I was thinking about this, that children understand what really is meant by, "It is time for recess."

It seems like a weird term when I was thinking about it. Maybe they think, "Well, this is time for another economic slump, or maybe it is time to go bald." Or maybe for the advanced genetics students they were thinking, "Maybe it is time to worry about my less dominant recessive genes."

The point is recess is disappearing, and the point is recess, to me, does not sound like a very fun idea. When I was in school we used to call it play time. Certainly, what we need is more time for play for children.

So, just in closing, a few remarks. When I was thinking about this topic it seemed to me that the typical nutrition-related health risk in children of this century or this millennium, for that matter, were things like hunger, malnutrition, and specific nutrient deficiencies.

These are very difficult and complex problems, but conceptually they are easy to think about because the effects are immediate, the health effects are immediate, and the solutions are obvious. You have a nutrition deficiency. You identify the deficiency and you correct it.

Nutrition health risk in children of the next century and the next millennium are going to be much different. They are going to be mediated by obesity, and the dramatic increase in persistence tells us that more and more of the population are going to become overweight. Survival in the obesity promoting environment is going to be more and more difficult, increased food availability, decreased availability for physical activity.

So just to summarize in the words of Dr. Dietz, who spoke before me, said that "Obesity is now the most prevalent nutritional disease of children and adolescents in the U.S." Based on what we have already heard this morning, it is not going away. It is going to get worse and worse.

The health and economic impacts are tremendous. Clearly, environmental modifications are essential with the objective of primary and universal prevention. Dr. Satcher told the story of John Snow. If John Snow was alive today, he would be going around communities saying, "This is obvious what is missing in these lives of children that is causing this problem, that they do not have opportunities for play."

And so, I think this is where the emphasis should be. The emphasis on play may be the best strategy for preventing obesity and improving our Nation's long-term health prospects. USDA Team Nutrition is an excellent example of partnerships that are being created to improve health and education of children to promote a healthy diet.

When I reviewed this last week, as I was preparing for my talk, I reviewed the USDA Team Nutrition. Just to remind you there are eight principles. One of the principles actually relates to physical activity and the belief that physical activity is essential to child health.

Other activities in this program measure physical activity, but I think their framework may already be there to promote physical activity in schools. So, there is a solution. Obesity clearly is a very complicated problem that results from many, many interacting factors over the course of a life span, the end result of survival in an obesity promotion environment.

Therefore, we need pretty widespread educational and environmental changes and the introduction of play. I am getting the zero minute signal. So, let me just close with the words of a woman who was unfortunately unable to be with us today, the First Lady, who actually when I heard she was going to be coming, I reviewed some of her recent writings.

As recently as earlier this year said, when she was talking of what children everywhere need, has recognized this problem: "Children need to play to explore the environments freely without prejudice, only then will they become--develop the skills to becom--leaders of nations."

So, I want to thank you again. I want to thank the agencies that have funded our work including the USDA, who have funded our work generously over the years. I especially want to thank the children who participate in our studies. Thank you.

Introduction of Dr. Leann Birch

DR. ANAND: We will have exactly a 12-minute break. So, please come back. We have an exciting program coming.
(Whereupon, the conference was recessed for a short break.)

DR. ANAND: On the program again. Every time I come to this podium, I am really amazed at the impressive credentials of all these people. It is very difficult to summarize the large number of accomplishments that they have made in their life.

Our next speaker is Dr. Leann Birch. She is Professor and Head of the Department of Human Development and Family Studies in the College of Health and Human Development at Penn State University. She completed undergraduate studies at California State Long Beach and received her Ph.D. from the University of Michigan. All of her studies were in the area of psychology.

Internationally recognized for her work, Dr. Birch's research interests are in developing controls of food intake in young children, including acquisition of food prophecies and aversions, the development of individual differences in lifestyle, and food intake control mechanisms. Dr. Birch will speak to us on Factors Influencing Food Intake Implications for Childhood Obesity. Dr. Birch.

Presentation by Leann Birch, Ph.D.

Pennsylvania State University

Factors Influencing Food Intake Implications for Childhood Obesity

Leann Birch, Ph.D., Pennsylvania State University--Thank you, Dr. Anand. I would like to thank Drs. Satcher, Dietz, and Goran for laying the groundwork for presenting the complexity of the issues that face us and really making it possible for me in my talk to focus on one small part of this problem.

I am going to be talking today about factors influencing food intake and the implications for childhood obesity. I think we have already heard that, in fact, in many cases the database for action on childhood obesity is limited.

This is certainly an area where this is true. I want to preface what I am going to say by saying that most of what I am going to be talking about today is based on data obtained from white middle class samples. So, among those ethnic groups where the problems are the most severe, we know very little about how familial factors might operate to produce childhood obesity and more work is really needed.

I said I was going to focus on a small part of the problem. I really want to talk about the food intake side of things. I want to talk about the first 5, 7, 8 years of life, and on the family context, or on the parent-caregiver-child interaction.

I think it is definitely a limited part of the problem, but I think it is also a part that has potential implications for anticipatory guidance and for prevention programs down the road.

We have already heard that the risk of obesity for a child who comes from a family where parents are overweight is much greater. That means we know from the literature that obesity is a result of gene environment interactions. It is complicated when you are talking about obesity in children, because parents of young children anyway are providing both the genes and the environment, making it difficult to look at these effects and try to determine the relative importance of them.

I would also just like to briefly point out that we see these heritability estimates that come out of population genetic studies that say that 40, 50 percent of obesity is due to genetic factors. But these heritability estimates really speak to the issue of the proportionate variance within a population, not within an individual, within a population that are accounted for by genetic factors, and really do not say anything about the interplay of genes and environment within the developing individual. I think that is an area where we really need to develop a clear understanding of what is going on.

One of the aspects of these environments that parents are creating starts very early. In fact, it starts in utero; certainly moves on towards the choice of an infant feeding method, whether the infant is breast-fed or formula-fed, the kinds of foods that are made available, the social context in which feeding occurs.

Modeling effects--we are doing some recent work where we are looking at linkages between maternal dieting and what is going on with young girls. I want to talk about that a bit later. Parents also modulate the extent to which kids are exposed to television, other media influences.

They use particular kinds of child-feeding practices, sometimes intended to bring kids and evaluate their compliance with dietary guidelines. I want to say a little bit about how that does or does not work very effectively. And, as I said a moment ago, parents' own dieting practices seem to also be linked to what they are doing with their children and to child outcomes in this area.

We know that even very early experience with breast milk, for example, the choice of the feeding method that parents use can have major impact on the child's early flavor experiences and the acceptance of solid foods. Now most of this frankly comes from studies conducted with rats and other animal models.

We certainly know that the flavors from the mother's diet are transmitted to her milk. And Julie Monella's work and that of her colleagues at the Monella Institute has shown that if flavors such as garlic, vanilla, mint, and alcohol are present in milk, that you see systematic changes in the infant's suckling patterns and intake. There is some recent work suggesting that, yes, this does influence the infant's first acceptance of solid foods.

I want to stop for a moment and just remind you that here we are at USDA where the Dietary Guidelines come from, and this Food Guide Pyramid that tells us what we should be eating. Remember that eating is a major source of pleasure for us all.

There have been some talk, teleological, I would admit, that in fact there is some possibility that making essential activities of life pleasurable might be a way to assure the survival of the species.

In this case, I think we could argue that maybe we are taking too much pleasure from good, and that in fact it has become counterproductive. If you lived in a context though where food was scarce and hard to get, then perhaps, making the activity of eating food pleasurable would be one of those things that would promote adequate intake.

There was a recent ADA survey. It came out last year, saying that preferences are the major force that drive Americans' food selection, and 40 percent of Americans said that fear of having to give up their preferred foods was really the thing that prevented them from eating

healthier diets. Now, this is certainly true of kids. It is something that I have been saying for years. Anybody who is a parent knows that basically kids eat what they like and leave the rest.

We have done some studies looking at the ways that preferences drive children's food intake. These are in cases where we are talking about young children, where food is made available to them and they, as I say, take it or leave it depending on whether they like these foods or not.

Other people have done similar work and I think find similar things including some work coming from Michael Goran's lab. In some work that we have done, we over a series of days offered kids opportunities to self-select their diets, three meals and three snacks a day for 6 or 8 days.

They were offered diets that had 33 percent of energy from fat. In fact, when we followed these kids around and analyzed everything that they ate, we found that in fact their diets ranged from about 25 to 42 percent of energy from fat, and that in fact their intake patterns were linked to what they told us they liked.

Okay. So kids who had preferences for high-fat foods tended to consume diets that were higher in fat. Interestingly, we found that kids' fat preferences and fat intakes were also linked to parental adiposity, so that heavier parents had kids who were preferring and eating diets that were higher in fat, at least suggesting the possibility that these relationships might be mediated by dietary intake patterns in the home.

This is just one piece of data that shows that as fat preference--kids fat preferences increased, percent of fat intake increased. The correlation is about .5, which accounts for a fair proportion of the variance in the data.

I would also like to say that kids seem to be quite sensitive to the energy density of foods, that they can learn to prefer energy dense over energy dilute food. Again, you can see that in a context in which food is scarce, being able to learn such associations might have some adaptive value.

We have done a number of experiments that have shown that kids really will learn to prefer energy dense foods--let's say yogurts that are energy dense over energy dilute ones--and that this could in fact be one of the factors that contributes to diets that are too high in energy and too high in fat.

Well, children are also, in terms of their responsivity to energy density. We also know that--at least under circumstances where they are left pretty much to their own devices, kids show some evidence of being able to regulate energy intake.

We have done a number of studies, again, looking at 24-hour energy intake, showing that while kids' intake appears to be very erratic at individual meals, when you look over the course of 24-hour periods intake is much more regular.

However, even when children are quite young, 3 to 5, or so, how well they regulate energy intake is related to a number of things, particularly, the extent to which parents report imposing a lot of control over their children's eating.

So, parents who really feel that it is their responsibility to take charge of how much, what, and when children eat have kids in fact who are less able to regulate energy intake. Again, this work is limited to white middle class samples. So, we are not quite sure what is going on in other environments.

I think wherever we look, we are likely to see that there are linkages between what parents do with young children and what happens with children's food intake certainly.

I mentioned that kids seemed to come equipped with the ability to be responsive to energy density. They also come with a set of other predispositions. In addition to celebrating the anniversary of a lot of other things related to public health issues, this is also getting towards the end of the decade of the brain.

One of the things that has come out of that is a lot of work showing, for example, that young children and infants actually come into the world predisposed to learn language. I would like to argue that as young omnivores, we come into the world prepared to learn a lot of things about food and eating.

There is a very dramatic transition that occurs in the first few years of life from consuming one food, milk, to consuming a modified adult diet of whatever culture you happen to live in. And, in fact, if you look at children who all start out consuming the same one food, who happen to live in different cultures, by the time they are 5 if you look at their diets, they might be completely nonoverlapping.

So, children are capable of learning to eat whatever is given to them. I would argue that if we work at it, we should be able to help children to learn to eat what we think is good for them. Anyway, children come into the world with a preference for sweets.

They do not have to learn to like sweet. We do not have to teach them anything about how to prefer sweet. They are equipped with that. Preference for salt is there by about 4 months. I think another point that needs to be emphasized to parents is that children--infant--are biased to reject new foods. Again, probably serves some adaptive function.

We know that this new phobia actually gets stronger through childhood, and then begins to subside, that it can in fact be reduced by repeated exposures to novel foods, so that, yes, the first time something new is presented it tends to be rejected. But, as I will show you in a moment, you do get dramatic changes in intake.

Now, these are some photographs from Jacob Steiner's work showing newborn infants' responses to basic tastes to simply make the case that infants are predisposed to respond to basic tastes in ways that are unlearned.

Here is an infant who has been exposed to a sweet taste on the tongue. Note the expressions, the calm sort of face, the smiling, relaxed expression. These two infants have had either sour or bitter tastes placed on their tongue. Clear rejection response.

I think as parents from early on, when you stick something in the baby's mouth you see a response. It is one of these. It effects what you are going to do subsequently, whether you are going to try to feed that food again or not.

Now with the exception of the preference for sweet and salt, all of the rest of our food preferences are learned. Now this learning involves a whole variety of kinds of learning including associations with the physiological consequences of eating.

Positive consequences result in preferences, so when you eat something and you are hungry, especially followed by the pleasant feelings of satiety, you may learn to prefer something. If, on the other hand--and most of you had this experience--you eat something and it is followed by the negative consequences of nausea and vomiting, you develop an aversion.

I have always thought it would be great if you could learn differential equations as quickly as you can learn conditioned aversions in one trial. The social context of eating, we have shown in a number of studies that we have done, also shapes children's preferences.

So children are predisposed to learn to associate foods with particular context and foods that are presented in positive context become more preferred. Those presented in negative contexts, such as coercive contexts, "Eat your vegetables, or whatever," become less preferred.

So children are learning a lot. They are learning not only what to like, they are learning what is edible and what is not. I do not have much time, so I won't tell any bug stories today, but they are learning how much to eat.

One of my colleagues, Barbara Rolls, and I have just done some work on portion size. What we see is that--I think if we look around us--we see that especially when we go out to eat, the portion sizes can be enormous. We wanted to see whether or not these portion sizes had effects on children's intake.

I think as adults we all feel that we are somewhat influenced, in terms of eating what is given to us. What we saw in that work was that for children around 5, they were in fact influenced by portion sizes. So, if you gave them larger portions they ate more.

On the other hand, children at the age of 3 seem to be pretty oblivious to portion size. They still seem to be pretty good at regulating energy intake based on some other kinds of cues, internal feedback cues of some sort, rather than on how much food is on the plate.

Now, unfortunately, as we get older, I think we are more and more susceptible to those things. We might ask ourselves, "What are kids learning when they look at these kinds of portion sizes?" I was some place with my own children not too long ago in a shop and they said, "Oh, mom, you have to come and see this."

They dragged me to the back of the shop and there was an antique coke machine back there with those little 8 ounce bottles. They said, "Did people really used to drink coke in those little tiny bottles?" The Big Gulp generation is definitely here.

At any rate, kids learn to like the foods that are made available to them. This new phobia can be reduced. As I said earlier, it could be reduced by repeated exposure to new foods in positive context. Kids have to have experience with foods in order for this to happen.

I always begin to get suspicious when we are doing work with young children and you present them something like broccoli and they say, "What are those little trees, anyway?" We cannot expect children to accept foods that they do not get familiar with.

We have done a number of studies where we have looked at kids' initial exposures to solid food. This is the kind of neophobic response that you tend to see in children. It looks very much like one of those rejection responses that I showed you in newborns.

What we have done in this work is we recruit mothers to bring their babies in. When the babies are ready to start eating solids, we then put them on a systematic protocol, where they feed a given solid food a number of times, the same time a day for about 10 days and we look at intake.

We have taken information from videotapes showing the babies' responses. Now, this is the same infant 10 days later eating the same food. Now, this is like the second mouthful of this coming in here. You can see that there is quite a dramatic change in the infant's response, and that again these responses do not look that different from the responses that you see initially.

And, again, parents are reading these responses, using as a basis for whether or not to continue feeding. If they see that rejection response and they do not know that, in fact, this is not reflecting a fixed dislike, but rather an initial reaction to something that is new--putting something in your GI tract is a pretty risky business.

Being neophobic or a bit fearful about that is probably pretty adaptive. I think it is one of those messages that we can do a better job of getting out there to parents--in terms of getting

children to learn to like foods that they do not readily accept, foods that are not sweet, those things at the bottom of the Food Guide Pyramid.

So what are the sources of information? The Food Guide Pyramid, of course. Although I have a question mark there, it is not quite clear to me how it works in some cases. I think everyday eating experiences provide a real venue for most of the learning about food and eating. And, of course, there is always the media, about which in fact we know relatively little.

The Dietary Guidelines include things like: eat a variety of foods; choose foods that are moderate in sugar, moderate in salt. I would argue that people do not really understand those terms very well, and that what we see happening is that people often simplify these messages in ways that may be counterproductive and start thinking about good foods and bad foods, rather than foods that should be consumed in moderation. Paul Rozin has published some recent work in *Health Psychology* making this point.

What is it that kids are learning from all of their experiences? Well, it is not totally clear, but there are some data that suggests it is not exactly what we might like. This is from *Pediatrics* a year or so ago, Munoz, et al., I think.

Only 1 percent of kids were meeting all of the Dietary Guidelines - recommendations rather; 45 percent meeting none or only one; by their definition discretionary fat and sugar equaled 45 percent of total energy intake, not really what we would like to see.

More recently, *Pediatrics* in 1998, Subar, et al. published some work showing that fortified foods, particularly ready-to-eat sweetened cereals, are very substantial, influential contributors to kids' intake and that low nutrient-dense foods are also major players.

They say this comprises intake of nutritious foods and impedes compliance with guidelines. I think though if you say, hey, what we start out with is a little creature who likes sweets, who likes salt, who has to learn to like everything else, and we put them in an environment where lots of sweet, salty, energy-dense foods are available, unless you really work very hard to counter that, you are going to wind up with exactly what we see.

This graphic was prepared by a waggish friend of mine called the "Hedonic Food Pyramid." You can see at the top we have Hagen Daz, Big Mac, the Colonel, donuts, and at the bottom, bran, lowfat, low-salt, low-cal everything. So this is what we are fighting.

As I said earlier, I think there are some of these predispositions that work directly at variance with ideas like moderation. This is what parents are confronted with. You have the sweet, salty preferences versus moderation, in terms of what kids are supposed to be consuming.

We want kids to eat variety, but they are neophobic. It is easy for kids to learn to prefer energy-dense high-fat foods versus those foods that should be consumed in moderation. I think

for parents who are concerned about these issues, they are really faced with a rather daunting task, where they know there are these diet and health links.

They know about the prevalence of overweight. Interpretations of the guidelines, as I said, many times get simplified into there are bad foods that kids should not eat and good foods that are okay. In addition, there are a lot of things floating around out there related to physical attractiveness, thinness, and, as I said, parents' own weight concerns in dieting.

Now, I want to say a little bit about what parents tend to do. I want to focus, just since I am running out of time here, on restriction and what happens in the case of restriction. We have done a number of studies looking at the effects of dietary restriction.

We have done that because we think it is very--a very important part of what well-intended parents are often doing to try to bring kids' diets into line with the guidelines. Let me just show you some results of one of these studies.

This is work that was done in our lab really looking at kids who had just had a meal, so they told us they were full. We brought them in and following this meal they were exposed to a whole variety of palatable snack foods, interesting toys.

We left them alone in this environment and looked at what they did. We also had data from these kids' mothers on the extent to which the mothers reported that they restricted children's access to these kinds of foods.

What you see is that, first of all, on average when these kids were full they consumed an additional 250 calories in this setting, which is a substantial proportion of total intake for a child of 4 years.

You have girls in purple and boys in yellow. What you see here is a real clear gender difference, which we see throughout everything that we have been doing, namely, that for girls as restriction increases, intake increases.

Okay. So the more moms restrict intake, the more kids eat if they are girls. It does not seem to have an impact on boys. This is some more recent work that shows the same thing in an experimental setting, where if you restrict access to one food, not to another, and then give kids opportunities to eat these things in unrestricted context--and we cannot--kids are not small forever. We do not control them forever.

You see that selection, intake, and kids' enthusiasm for these foods is significantly greater when we restricted access. So restricting access is not the solution to how to alter kids' diet. As I said, restricted access predicts kids' intake, particularly for girls.

In closing, I just want to say that it has already been shown that there are some differences in the data for girls and boys, especially during the preschool period, with young girls showing greater changes, greater increases in the prevalence of obesity, and greater absolute prevalence levels.

I think there are some things going on that are impacting especially on girls and that we see that even in grade three, 30 percent of girls think they should be thinner. I have tried to lose weight.

These are data from 5-year-olds in our current study where we asked them about dieting. We did not think they would know much of anything. In fact, about half of these 5-year-old girls said they did not know much about dieting, but they said some very interesting things.

When they asked them what is a diet, they said, "You do not eat; to lose weight; drink diet soda." Harry Green would like this from Slim Fast, "Drink a milk shake." What do people do when they are on a diet? "Do not eat; exercise; drink something."

They are amazingly knowledgeable, even at the age of 5. The best predictor of whether girls knew anything about dieting or not was--guess what--whether their mothers were currently dieting. Okay. It is not rocket science, but it says that what is going on in the home is very important. You have already seen similar data. These are just the ones showing the gender difference during the preschool period.

We are concerned because we think there is a greater--well, we know there is a greater prevalence of overweight in girls. There is greater weight concern in girls. We know from our own work that there seems to be these tighter links between what parents are doing, parental control, and adiposity in girls. We think this may have something to do with these differences by gender that you see.

To cut right to the end here, I think there are some basic pieces of information that can help us to come up with some anticipatory guidance that might be helpful concludes the idea that kids' initial negative responses to foods can be altered through repeated experience.

We have to live with the preference for sweet and salt. Those can also be modified through experience. Restriction does not work to produce moderation. Links between parents' own dieting and children's eating and weight concerns are definitely there.

I have not had much time to talk about those, but we know that mothers who are restrained eaters use more restriction, at least with their daughters. In today's obesigenic environments, I think we really need to help children to learn to like the foods that are good for them. At the moment, we are not doing a very good job. Thank you.

Introduction of Dr. Christine Williams

DR. ANAND: Our next presentation is from Dr. Christine Williams. Dr. Williams comes to us from the American Health Foundation, where she is Director of the Child Health Center and Chief of the Division of Child and Family Health. She also holds the title of Clinical Professor of Pediatrics and Medicine at the New York Medical College.

Dr. Williams earned her B.S. and M.D. degrees from the University of Pittsburgh and M.P.H. from Harvard University. Dr. Williams' research interest includes child nutrition and health, preventive cardiology, pediatric obesity, lipid disorders, and diet in preschool children, and primary prevention of cardiovascular diseases. She has been a pioneer in developing comprehensive health education programs for preschool and school-age children and their families.

Dr. Williams will present Strategies for Primary Prevention of Obesity in PreSchool-Age Children. Dr. Williams.

Presentation by Christine Williams, M.D., M.P.H.
American Health Foundation

Strategies for the Primary Prevention of Obesity in PreSchool-Age Children

Christine Williams, M.D., M.P.H., American Health Foundation--Thank you, Dr. Anand. It is certainly a pleasure to be asked to speak with you today on the topic of childhood obesity. In my presentation, I would like to stress four points. First of all, that childhood obesity has been increasing, even among preschool children; second, that the increase in preschool obesity has serious implications for future child health; third, that our success in preventing obesity in childhood may be most effective if begun before school age; and, finally, that we probably already know enough to begin preventing obesity in children.

It is clear from what has already been said that obesity has become epidemic in the United States. The epidemic has affected our adult population and has now reached down into childhood. Few realize, however, that the increase in childhood obesity is even being observed among preschool children as young as 4 years of age.

This increase has been demonstrated in national surveys such as the NHANES studies, which have been conducted since the 1970's. What the figures show, currently, almost 8 percent of 4- and 5-year-old children in the United States are overweight, but is above the 95th percentile of weight for height growth reference.

This represents a significant increase in the past 20 years, especially among girls. The percent of 4- and 5-year-old girls who were overweight increased from 5.8 percent in the early '70s to over 10 percent recently, almost a doubling.

Overweight among boys also increased but not as much as for girls. There are differences by ethnicity, as has been stated already. For both genders combined, overweight is highest among Mexican American children; intermediate among black children; and lowest in white children.

This increase in obesity has also been observed among low-income American children. This data is from the CDC pediatric nutrition surveillance system. The percent of low-income children under 5 who are overweight has increased between 1983 and 1985.

At present, 21.6 percent are above the 85th percentile cutoff compared with 18.6 percent in 1983, and a similar proportion has increased above the 95th percentile. Again, this increase has been seen in all race ethnicities; Hispanic children having the highest prevalence, both in 1983 and 1995; black children intermediate; and white children the lowest.

The greatest increase in overweight among preschool children, as you can see, is among the older children, the 4-year-olds, similar to the findings in the NHANES prestudy.

We conducted our own survey of more than a thousand 2- to 5-year-old children in nine Head Start Centers in New York in 1995 to '96, as part of a 3-year NHLBI-funded cardiovascular risk reduction project called Healthy Start: 12.1 percent of our children, who are about 3-1/2 years of age, had body mass index in both the 95th percentile for age, sex, and ethnicity, based on NHANES predata.

Again, the Hispanic preschool children had the highest prevalence of weight; black children intermediate; and white children the lowest. So, I think we can conclude from this data that the prevalence for overweight among preschool children has increased in the United States, and that the increase is increasing in children regardless of gender and race, although some groups are more affected than others.

The second point I would like to emphasize is that increase in preschool obesity may have serious implications for child health. There is evidence that obesity in young children may adversely affect their health, both physically and mentally.

In our Healthy Start project, we evaluated diet and cardiovascular risk factors in these 2- to 5-year-old children in New York. People would be surprised that only 38 percent of the children had elevated total cholesterol levels at an average age of 3-1/2; 21 percent of them had low HDL good cholesterol levels.

We also found that the overweight children had significantly lower levels of good cholesterol than leaner children, especially those above the 95th percentile cutoff for body mass index. We also found that the body mass index in these young children was positively and significantly correlated with both systolic and diastolic blood pressure.

The higher the body mass index, the higher the blood pressure. And, again, these are 3- and 4-year-old children. The relative risk of borderline high and high systolic and diastolic blood pressure more than doubled for preschoolers with body mass index above the 95th percentile, compared with those below the 85th percentile.

As far as mental health, childhood obesity certainly takes a toll on self-esteem, peer relationships, and invitations to parties and participation in sports, as Dr. Dietz described. There are not many studies with preschool children.

However, we do know that even preschoolers developed negative attitudes toward obesity at this early age. In one study preschool children were less likely to pick an obese child to be their playmate as children with a variety of other handicapping conditions.

I think it is probably not surprising that they have developed these attitudes, since we tend to make fun of obese children. And, perhaps, even preschoolers who see the video "101 Dalmatians" laugh at Rally, the fat puppy, who cannot quite squeeze through the hole to escape from the kidnappers.

So I would suggest that there is evidence that an increase in preschool obesity has serious implications for future child health, because it affects physiologic measures such as blood pressure and cholesterol, and also tends to decrease self-esteem and jeopardize mental health.

The third point I would like to stress is that our success in preventing childhood obesity may be more effective if the interventions are initiated before school age. Why is this true? One reason I think we should begin prevention early is perhaps that we would like to delay adiposity rebound.

Adiposity rebound is something that was first described in 1984, by Roland-Cachera, who drew body mass index curves for 151 children from 1 month to 16 years of age. She noted that the body mass index increased from birth to age 1, then fell and reached a low point at about 6 years of age before it rebounded again.

Early adiposity rebound before 5-1/2 years of age was followed by greater adiposity at age 16, but if the rebound occurred at a later age. These are charts of children who were obese at age 16, and on the lower line children with the normal degree of leanness at age 16.

This is a body mass index chart for a girl that was referred to our clinic at age 6 for severe obesity. You can see in this child that adiposity rebound occurred even before 3 years of age. So, in many children we need to begin preventive efforts very early in life, in the first few years of life perhaps.

It is interesting though that even though adiposity rebound was described more than 15 years ago, there is still a lot that we do not know about it. For one thing, we do not know if the adiposity rebound in American children has been changing over time.

If more American children are getting more obese, has adiposity rebound been decreasing? We also do not know much about what triggers adiposity rebound. Is it programmed by genes? Is it triggered by environmental factors such as diet and physical activity? Or is it triggered by complex gene environmental interaction?

There are some clues from studies. This is one by Klesgos, that preschool children with accelerated weight gain in the early years, that the proportion of calories from fat is very important. He also found that baseline aerobic activity was significant, but that the change in calories from fat was the most significant factor in children who had accelerated weight gain. So, one wonders is this a trigger for early adiposity rebound. We do not know.

Dennison showed another study that excess consumption of fruit juice was associated with increased obesity in preschool children, although the number of children in the excess fruit group--fruit juice group was rather small.

Another reason for starting prevention early is that obesity in children age 3 and older is an important predictor of adult obesity, as Dr. Dietz described in this study by Whittaker, which basically emphasized that parental obesity is an important risk factor for obesity in childhood.

This is something, however, that we have known since the 1960's in the 10 states studied, where Dr. Goran showed that when children have lean parents they tend to be lean; and when children have obese parents, they tend to be obese. So there appears to be good rationale for believing that obesity prevention efforts should be initiated in the preschool period for maximum effectiveness.

The final and most important point that I wanted to make this morning is that we probably already know enough to begin to prevent this problem, and that preschool programs provide a wonderful opportunity to do so.

To be effective, we need both a population or a public health-based approach for all preschool children; and we also need a high-risk or individualized approach for children of obese parents and those who demonstrate accelerated weight gain early in life.

An attractive population approach to obesity prevention in the preschool period I think would be to implement comprehensive preschool health education programs at nursery schools, and Head Start centers, and day care centers in the United States.

Currently, there are more than 3 million children attending nursery schools and Head Start centers. I think that the rationale for comprehensive preschool health education is for, one, that health habits are acquired and practiced during this preschool period that Dr. Birch described.

We also know that knowledge and attitudes about health habits are acquired as well. We recently did a little survey of smoking intentions in preschool children, and it is amazing how many children actually say that they think that they will smoke cigarettes when they are older. And, of course, this is highly correlated with parental smoking.

We also know that more and more children are attending day care and preschool centers, and that this will probably grow as there is more acceptance for universal preschool in all children. Children acquire and practice a number of health behaviors during this early period of life.

For example, safety behaviors: they wear seat belts; wear helmets when they are riding bikes; hats and sunscreen when they are going outdoors; they learn to avoid dangerous objects and poisons; they begin to develop dietary behaviors; develop food preferences and choices; physical activity behaviors; preference for active or inactive play; and they learn hygiene behavior, such as washing their hands, brushing their teeth, and other--taking baths, and other hygiene behaviors.

So, I think it is important for disease prevention that health education be comprehensive in nature, because this is more than just a curriculum for the children. Comprehensive programs should involve the parents and parent education; it should involve the teachers and teacher training; it needs to involve the cooks in the food service; and it needs to involve the physical activity program.

One example of comprehensive preschool health education is one that I have helped develop over the past few years called "Healthy Start." This is a program that has 12 educational units.

Two of the units address nutrition--developing healthy eating patterns and food preferences in young children, making it fun for them; a unit on fitness; a unit on drug-free me; and other units on self-esteem and environmental health.

Included in this are teacher training, take-home educational material for parents, and food service modification modeled after the CATCH intervention; and, in addition, evaluation instruments such as a knowledge and attitude quiz.

The question is will this type of program help to prevent obesity? I think that it will if it is combined with other public health strategies implemented by pediatricians in their offices and by other programs implemented through the WIC Program and others.

We know that obesity results from positive net bound energy balance when more calories are consumed than expended. The major modifiable factors in the equation are caloric intake and caloric expenditure of physical activity. So, the major goals of a preschool prevention strategy would be to help children, parents, and teachers to achieve a child healthy diet, heart healthy diet, and physical activity role.

This means reducing the total unsaturated fat content of preschool meals and snacks, increasing dietary fiber with more grain, vegetables, fruits and legumes; and helping parents and teachers do the same thing in their lives.

Equally important is helping preschools implement adequate physical activity programs and helping parents and teachers to initiate more personal and family physical activity in their lives as well.

The Dietary Guidelines that we are recommending are consistent with the American Academy of Pediatrics Guidelines published in 1998, which recommend that children over the age of 2 consume no more than 30 percent and no less than 20 percent of their energy in fat, and less than 10 percent of saturated fat.

The problem is that the majority of preschool children and children, in general, are not meeting these goals. We still have a long way to go. This is data from NHANES I in the dark

bars, and NHANES II, and data from NHANES III is not much better. Data from CSFII-95 is a little bit better, but still the majority of children do not meet these dietary fat guidelines.

Similar for dietary fiber intake, the age plus five recommendation is that children should consume at least their age plus 5 grams per day. You can see in this chart that young children tend to meet the goals, but the red bar below indicates that older children are not meeting the dietary fiber goals.

Dietary fiber is important because it helps to reduce dietary fat. This is data from the Bogalusa Heart Study. On the left are children who had the highest fiber intake; on the right, children with the lowest fiber intake, so that fiber helps to reduce the fat intake in children; and also fiber that comes from grains, and fruits, and vegetables provides a lot of other important nutrients.

It is interesting that, in relation to the French paradox, that French consume more dietary fiber than American children and that they also obtain a lot more of that fiber from fruits and vegetables.

In our Healthy Start project, we were able to demonstrate that it is possible to reduce the total fat and saturated fat in preschool meals, as you can see the changes over this 2-year period. And also, we were able to demonstrate that this change was associated with a modest but significant decrease in blood cholesterol levels in children.

This kind of program where we reduced dietary fat in childhood is consistent with normal growth and development, as long as there is attention paid to keeping up caloric intake.

The Stripp Baby Study in Finland has demonstrated this--that it is primarily energy intake and not fat intake that is associated with child growth and development, so that we can reduce the fat intake of children as long as we maintained their caloric intake for optimal growth and development.

Most people would be surprised that we are recommending increased physical activity among preschool children. Most teachers in preschool centers are trying to get the children to sit down and be quiet, and not to be more active. The important thing is that children do need, especially preschool children, to practice motor skills.

For example, motor skills such as jumping, kicking, running, throwing a ball--these are skills that children do not acquire naturally. Our physical activity programs in preschool need to focus on teaching children these skills so that they will acquire them, practice them, and then enjoy being more physically active. I think that is an area where we could make a lot of progress.

I think we also need to encourage our communities to help children to be more physically active and to provide neighborhoods that are safe for our children to be active in once again. In

the background of this picture, you can see a little preschool child watching the bigger children and imitating them.

I think that perhaps programs where we used older children as peer leaders to help teach younger children to develop healthy habits in physical activity and dietary behaviors would be very effective, because children learn from others and young children enjoy learning from older children.

All of these things that I have recommended are consistent with these principles for primary prevention of childhood obesity. First of all, prevention programs I think should begin as early as 2 to 3 years of age, if not earlier. They should definitely have no deleterious effects.

They should be relatively inexpensive to implement, and they should benefit all participants, even those who would not become obese if they did not participate. I think that they would probably include these features--a heart healthy diet and also increased physical activity.

So, today we have addressed a number of critical questions about childhood obesity, like a reporter who is trying to figure out just what it is. When did it actually begin? Where is it occurring? Why did it occur? Which children are affected the most? And, finally, how can it be prevented?

I do not presume to have all of the answers, but I think there is enough evidence to suggest that prevention of childhood obesity should begin as early in life as possible, but at least by 2 to 3 years of age, and that preschool programs that include health education, daily physical activity, and a child healthy diet could be an effective public health intervention strategy, and also it can be a lot fun. Thank you very much.

Introduction of Dr. Thomas Robinson

DR. ANAND: Secretary Glickman is expected around noon time, and I am sure he has some very exciting things to say. We now move to our next speaker, Dr. Thomas Robinson. Dr. Robinson is Assistant Professor of Pediatrics and Medicine at Stanford University School of Medicine and

Co-Director of Youth Studies at the Stanford Center for Research in Disease Prevention. He received his B.S. and M.D. degrees from Stanford University and an M.P.H. in Maternal and Child Health at UC Berkeley.

Dr. Robinson's research has focused on cardiovascular disease risk factors reduction, tobacco and alcohol abuse prevention, the effects of television viewing on health behaviors, childhood obesity prevention and treatment, and use of interactive communication technologies to promote health behavior change.

Dr. Robinson is Board certified in pediatrics and practices general pediatrics and directs the pediatric weight control program at Lucile Packard Children's Hospital at Stanford. Please join me in welcoming Dr. Thomas Robinson.

Presentation by Thomas Robinson, M.D., M.P.H.
Stanford University

Preventing Obesity in School-Age Children and Adolescents

Thomas Robinson, M.D., M.P.H., Stanford University--Thank you, Dr. Anand, Under Secretary Watkins.

I do not have to convince you that prevention is a good idea. However, there are some compelling reasons for attacking childhood obesity with population-based prevention efforts. In the medical model, you need to identify a high-risk group to target with your treatments. In the case of childhood obesity, it is more difficult to identify a true high-risk group.

First, physical, psychological, and social morbidity is unusual in obese children and adolescents. Although being overweight certainly puts kids at increased risk of health, psychological, and social problems, as we have heard, the reality is that the great majority of obese children have none of these problems.

Second, many obese children do not become obese adults; and most obese adults were not obese children. I would argue that the greatest health risk of childhood obesity is the risk of becoming an overweight adult. It depends on which studies you look at, but, in general, less than half of obese prepubertal children will become obese adults. From two-thirds to three-quarters of obese adolescents will become obese adults.

Third, childhood risk factors for clinically significant obesity, persistent obesity, or adult onset obesity are only weakly predictive. In other words, we are unable to predict, with any reasonable accuracy, which overweight kids will develop a health problem or which will remain obese into adulthood. We are also unable to predict, with any accuracy, which normal weight kids will grow into overweight adults.

Similarly, we are unable to identify those overweight children who are most likely to benefit from treatment. While some intensive treatments have demonstrated long-term success in up to 30 percent of subjects, most available treatments have produced only modest unsustained benefits, and some have been associated with health risk of their own. As you are aware, adult treatment results have been even less successful. Surely, additional research is necessary to develop more effective treatment programs and to identify those children most likely to benefit from treatment. However, because of our limited ability to stratify risks, a population-based prevention approach is likely to hold the greatest promise for reducing obesity among children and adolescents.

Now, that being said, our experience to date is that it is very difficult to prevent obesity. For example, Dr. Ken Resnico and I recently reviewed all of the school-based prevention studies targeting risk factors for cardiovascular disease, including obesity (Resnicow, K. & Robinson, T.N., School-Based Cardiovascular Disease Prevention Studies: Review and Synthesis. *Ann Epidemiol* 1997; 7:514-531). We looked at all published controlled studies dating back to 1980 that assessed at least one physiologic risk factor. These include blood lipids, blood pressure, body fat, and cardiorespiratory fitness.

We identified a total of 12 U.S. studies and 7 international studies including 3 studies that intervened exclusively in physical education or school food service. When we calculated the percentage of positive results for each outcome we found the following:

There were significant positive results in 80 percent of the smoking outcomes measured; 65 percent of attitudes, beliefs, or knowledge outcomes; 36 percent of fitness outcomes; 34 percent of diet outcomes; 31 percent of lipid outcomes; and so on down the list. As you can see, adiposity is down at the very bottom of the list.

Significant reductions in adiposity were achieved in only 16 percent of the body fat measures reported from all of these studies. In addition, because a single study may have included multiple measures of adiposity, such as both BMI and skinfolds, this success rate is reduced to only 9 percent if you count each study only once.

Since this review was published, a number of other obesity prevention studies have been published, and while some report success, when you read beyond the abstracts and get to the actual results you find pretty similar disappointing results.

As illustrated by these results, I would conclude, in general, that programs attempting to prevent obesity by directly targeting increases in physical activity and improved diet have had only limited effects. However, there are some exceptions.

One of the exceptions is our Stanford Adolescent Heart Health Program (Killen, J.D., Telch, M.J., Robinson, T.N. et al., Cardiovascular disease risk reduction for tenth graders. A multiple-factor school-based approach. *JAMA* 198; 260:1728-1733). I am highlighting it, not only because it is ours, but also because it is one of the few studies that has targeted adolescents. This study was a randomized control trial involving all tenth graders in four ethnically diverse public high schools. It was funded by the National Heart, Lung, and Blood Institute. The objectives of the study were to increase aerobic physical activity, increase physical fitness, decrease dietary fat intake, decrease body fatness, and decrease smoking.

Two schools were randomly assigned to receive a 20-session intervention, and the other schools served as untreated controls. The entire intervention was delivered in the classroom, and the educational methods used were derived from Bandura's social cognitive theory.

A total of 1,447 tenth grade students participated, and we assessed them before and after the intervention. The post-measure was 2 months after the intervention was completed. At follow-up, compared to controls, a significantly higher percentage of treatment group students had become regular aerobic exercisers. This was also reflected in increased physical fitness, which we measured with resting heart rate. As you can see, both boys and girls in the treatment schools had significant reductions in the resting heart rate compared to controls.

Treatment group students also reported increases in their lowfat/high-fiber food choices compared to controls. The self-report physical activity and diet results were substantiated with changes in body fatness.

Treatment group students had statistically significant relative decreases in body mass index over the course of the study. Similar significant relative decreases were found for triceps skinfold thickness and subscapular skinfold thickness.

This study focused on influencing individual behavior. Another approach that has been advocated has been to try to alter behavior passively by changing the environment. This is usually attempted through changes in physical education programs or school meals.

In general, these types of interventions have been relatively effective at increasing physical activity and decreasing dietary fat intake, but they have not been successful at changing body fatness. Again, there are exceptions here, too.

The main exception is the Adelaide Heart Study from Adelaide, Australia (Dwyer, T., Coonan, W., Leitch, D. et al. An investigation of the effects of daily physical activity of the health of primary school students in South Australia. *Intl J Epidemiol* 1983; 12:308-313). In this study, fifth graders who received intensive daily endurance fitness training for 1-1/4 hours per day over a period of 14 weeks had significant decreases in skinfold thicknesses and improvements in endurance in comparison to controls. But as you probably have thought yourself, the intensity of this intervention was substantially greater than what is likely to occur in American schools, where we are often fighting for any physical education at all.

Because of the limited effects of most previous approaches, our group at Stanford has adopted a broader, multiple component intervention model for a current set of prevention studies. This model includes interventions targeting the school environment, interventions targeting the home and family environment, as well as more intensive interventions targeting high-risk children and families. Therefore, we are focusing on both primary prevention and secondary prevention as part of the same intervention.

Based on this model, we designed what we believe is the current state-of-the-art obesity prevention program. We call it "Obesity Prevention for Pre-Adolescents" or OPPrA for short.

The OPPrA trial was funded by the National Heart, Lung, and Blood Institute and involves a cohort of approximately 1,000 third grade children in 13 public elementary schools in a single school district. The sample is socioeconomically and ethnically diverse.

Schools were randomly assigned to two experimental groups. Six schools are receiving the obesity prevention program, which we call a "Physical Activity and Nutrition Program." The other seven schools are receiving a tobacco and alcohol prevention program. The intervention lasts for 3 years, continuing from the third grade through the fifth grade. Assessments are made

every 6 months through the intervention, with a 1-year follow-up when the children are in the sixth grade.

Some of the more unique aspects of the program inlcude: First, all of our interventions are strongly founded in social cognitive theory. I am a strong believer that most of our past success, for a large number of different health behaviors, is due to our emphasis on trying to faithfully apply our model of behavior change.

Second, we are attempting to alter food preferences. This is one of the first studies to try to apply some of Dr. Birch's findings to an intervention program. We are using parent newsletters and a videotape sent to each family to help parents positively shape their children's food preferences. We also have taste tests of fruits and vegetables during lunch to expose children to new foods in a positive context.

We are also attempting to reduce television viewing. This has several theoretical benefits, as you have heard already: to reduce the eating that goes on while watching T.V., to reduce exposure to food advertising, and to provide an opportunity for more active behaviors.

Fourth, many of our intervention components also involve the children in health advocacy activities. Some of my colleagues at the Stanford Center for Research and Disease Prevention have demonstrated that involving children in health advocacy may be particularly effective at influencing their own behaviors. This helps to promote environmental changes but also increases intrinsic motivation, as well as social pressures, to adopt and maintain healthful behaviors.

Finally, we are including an intensive treatment program for high-risk children and their families. For this study, we define high-risk as children who are already overweight. We are using the same family-based group program that we use in the clinic settings, which is a less intensive adaptation of Epstein's traffic light program. We run groups two nights per week in one of the school sites.

The overall intervention, from third through fifth grade, is as follows: In third grade, there is a 5-A-Day nutrition classroom curriculum; parent newsletters, which inform parents what is going on in the classroom and provide tips for making the home environment more receptive to diet and activity changes; a new PE program, which is intended to increase the activity levels of all children and is adapted from the NHLBI CATCH Program and the SPARK PE Program; taste tests during lunch time, during which we offer samples of new fruits and vegetables.

The taste tests have produced a lot of enthusiasm from the children. We even had one mini-riot when we ran out of jicama at one school. Children were pounding the tables yelling, "We want jicama, We want jicama."

There is also a "5-A-Day Summer Club" as an attempt to help children maintain changes over the summer. The summer club allows children to correspond with teachers over the summer and continue to receive some recognition for achieving and maintaining their goals.

In grade four we included the television viewing reduction curriculum; the parent newsletter is continued; the PE program continues; the taste tests continue; summer programs continue with a focus on both 5-A-Day and television reduction; and the optional weight control program for overweight children is first started in the fourth grade.

In the fifth grade, the focus is on reducing fast-food and junk food. Parent newsletters and the parent videotape go out to all parents; the PE program continues; taste tests continue. There is an emphasis during school lunch on nonfat milk. The optional weight control program is also continued into the fifth grade, providing up to 2 years of treatment.

We are currently starting the third year of the intervention. Because the study is ongoing, I am unable to present any of the outcomes at this time.

Results from our pilot studies have encouraged me to explore what I consider to be more innovative approaches to preventing obesity. This has led to additional proposed obesity prevention projects. For example, in one proposed study we aim to prevent obesity in African American girls with a combination of reducing media use and participation in traditional African and modern African American dance. In a brief pilot study of a similar dance program during PE, we found impressive effects on both physical fitness, as well as body fatness.

To conclude, I would like to emphasize that all of these studies target child and adolescent obesity as more of a behavioral problem than purely a nutritional problem. While successful obesity prevention has to boil down, eventually, to effects on calorie balance, children do not eat fat and calories, they eat foods. Children do not burn calories, they play and move around. As a result, I believe that the more successful solutions to the problem of childhood obesity are going to be those that focus more on specific behaviors, that, in turn, influence energy balance as opposed to traditional nutrition education. Thank you.

Introduction of
Secretary of Agriculture Dan Glickman

MS. WATKINS: Dr. Robinson, thank you so much. I am honored to be able to introduce Secretary Dan Glickman, who was sworn in as the 26th U.S. Secretary of Agriculture on March the 30th, 1995. Prior to the Secretary's confirmation, he served in the U.S. House of Representatives for 18 years, representing Kansas for his congressional district.

When he was in Kansas early on, he was on the School Board in Kansas. So we have had an opportunity to share some interesting situations when he was on the School Board in Kansas. I just have to say to you this morning that under Secretary Glickman's aggressive and visionary leadership, the Department of Agriculture has led the way in the Federal Government in improving the nutritional health of children in America.

The National School Lunch and School Breakfast Programs have had its first major reform under his leadership in over 50 years, ensuring that our school meals meet the Dietary Guidelines. This will improve the long-term health of our children and save billions of dollars, and that is exactly what the Secretary wants to be able to do, to help save on health care costs to the American taxpayers.

USDA is feeding more children and families, and one of Secretary Glickman's priorities is to ensure that we are not throwing away and wasting a lot of food in this country, so he has a major food recovery and gleaning effort.

Secretary Glickman hosted the First National Food Recovery and Gleaning Summit in 1997, which brought together public and private interests groups, the public sector, farmers, representatives from other governmental agencies to talk about hunger and to seek some solutions. He has been successful in reaching full funding for WIC. We now serve over 7.5 million mothers and children.

On August the 5th, 1997, Secretary Glickman kicked off what was called, "Loving Support Makes Breast-Feeding Work," so that we could have a massive campaign in educating mothers on breast-feeding.

Secretary Glickman spearheaded the effort to get food stamp benefits restored to legal immigrants. And as a result of his leadership, for the first time in over 20 years, we celebrate today the reauthorization of our Child Nutrition Programs, which passed in Congress with an overwhelming bipartisan majority vote in both the House and Senate.

The centerpiece of that for the Secretary is the after school program, so we can now serve children through the age of 18 in after school snack programs. It is my honor to present to you the Secretary of Agriculture, Dan Glickman. Secretary Glickman, thank you.

Remarks by Dan Glickman, Secretary of Agriculture

Thank you, Shirley. I want to thank you and all the folks at the Food, Nutrition and Consumer Services who put this conference together, particularly Dr. Rajen Anand and his staff at USDA's Center for Nutrition Policy and Promotion. For 4 years, this Center has focused the attention of health and nutrition folks in and outside of government on the nutrition challenges of the 21st century. I want to applaud them for choosing the topic that brings us here today.

This is the first government conference on childhood obesity, and I am proud that it is happening at the Department of Agriculture. Yes, we are the department of America's farmers and ranchers. But we are also America's food and nutrition department--fighting hunger and promoting healthy eating and healthy lives.

Over the past 20 or 30 years, thanks to the work of USDA's Human Nutrition Research Centers, leading universities, and private research, we have come to understand a whole lot more about the role of nutrition in health. But our greatest challenge, as policy makers and public health advocates, remains to translate what the experts know into what people do, and nowhere is this challenge more daunting or more necessary than when it comes to our children.

Here in Washington it seems everything we do is for the children whether it's protecting the environment or cutting the deficit. Take any major childhood disease from juvenile diabetes to leukemia and the campaign to end it is massive, well-funded, and highly public. Everyone wants to protect children. Yet, when it comes to the sensitive issue of childhood obesity, too often we fall silent. We are here today to break the silence and lay open for the country the hard facts and necessary choices we need to make to deal with what has become a quiet epidemic in America.

The simple fact is that more people die in the United States of too much food than of too little, and the habits that lead to this epidemic become ingrained at an early age.

Everyone here knows the statistics: Obesity and overweightness affect 10 million U.S. children. That's a record, and there's no real sign that it won't be broken again soon. In the past 20 years, the number of obese children has doubled, placing more Americans at risk of high cholesterol, blood pressure, heart disease, diabetes, arthritis, and cancer--all at an earlier age.

Obesity contributes to 300,000 deaths each year. That's close to 1,000 lives lost each day at a cost to our health care system of $70 billion a year, or 8 percent of all medical bills.

And, the problem is literally growing before our eyes. Shirley met a small-town superintendent in Pittsburgh not too long ago. What was his #1 concern? Not the quality of education which is quite high in his district. It was the growing size of his kids.

We need to take this issue seriously. For at least one in five kids, overweightness is not a cute phase that will be outgrown. It's the start of a lifetime of serious health problems. It is time we elevate this issue to its rightful place near the top of the public health agenda alongside cancer, heart disease, and other leading killers of Americans today.

As we talk at this conference about causes and prevention, we need to think about the roles that each of us can play--government, doctors, schools, parents, communities, industry and producer groups, even the media. We all have an influence, and we all have a duty. That duty is to recognize the simple fact that it does take a village to raise a healthy child.

The solutions aren't simple, and they can't be heavy-handed. This is a complex issue because it overlaps with some very sensitive areas: personal choice, culture, economic status. So we're not here today to impound the Taco Bell Chihuahua or unplug the Coke machines or ban Happy Meals. We are here to arm America's families with the facts, and to develop effective strategies aimed at helping our children live healthy lives and have fun eating right.

Clearly, USDA--especially in our work with the schools--can play a key role. This Administration's built a strong record to date. In 1997, we overhauled the School Lunch Program and required that fat be reduced to less than 30 percent of calories, and that school meals meet the dietary guidelines for healthy living. We've launched major nutrition education efforts aimed at elementary and middle school, and we've made nutrition education a staple of our food assistance programs--from food stamps to the Women, Infants and Children Program.

We are doing a better job of reaching our kids both with healthy meals and health education, and we are seeing results. Contrary to popular myth, children tend to eat more fruits and vegetables at school. Why? Because more are offered. They're readily accessible, and a conscious effort is made to push healthy food and make it appealing to kids.

Unfortunately, in addition to healthy meals, schools also have vending machines and open-campus policies that have half the student population heading to the drive-thru for lunch. These are temptations all of us must deal with, so the long-term answer is not to dictate what folks eat, but to help schools fulfill their primary goal which is preparing children for a strong future through education.

Schools teach our children the three Rs. We also need to teach the big 'N' which is why this Administration created Team Nutrition. This program develops nutrition education materials for the schools that teach kids the healthy eating basics in a way that sinks in. We've actually had parents call the schools to complain about this effort because when they went to the grocery store, they caught their kids slipping the less healthy food back onto the shelves.

In the past, we've also had nutrition education and training grants which worked hand-in-hand with Team Nutrition providing funds to teach the teachers about nutrition. Unfortunately, Congressional leaders didn't see the value of this effort. This Administration asked for $10 million. We got not a single dollar. U.S. businesses spend an estimated $30 billion a year promoting their food products, regardless of the role they play in a balanced diet, and we cannot get $10 million to teach kids how to navigate all these choices and enjoy foods in healthy proportions. That tells me that we have a long ways to go to overcome the dangerous disregard for this problem that is still out there.

We at USDA are doing everything we can to make sure the health message reaches American families. Everyone here is familiar with the Food Guide Pyramid. It's one of the most recognizable icons in the country just about as identifiable to the American people as Mark

McGwire. We are now working on a kids' version, so elementary students can understand and apply these principles and adopt healthy eating habits at an early age.

I'm also pleased to announce $500,000 worth of nutrition education grants to efforts in five States to help community food banks, public health centers, and farmers markets help families in low-income areas achieve healthier diets on their tight budgets. This effort is important because low-income children are nearly three times as likely to become obese.

We need to reach more families, and USDA will increase its efforts. In fact, we will soon begin printing the Food Guide Pyramid directly onto food stamp booklets, so it's right there when folks go to the grocery store--an easy reference as parents make their purchases.

We continue to explore new ways to reach people. Currently, for example, there's nothing in the WIC program that says anything about physical activity even though this is the #1 reason for the rapid rise in childhood obesity. Through WIC, we encourage parents to stop smoking, to get their children immunized, to eat healthy. We also should encourage active lifestyles. I've asked Shirley and her staff to take a formal look at all our nutrition programs to see if there's a way to link diet and exercise and address the whole problem, instead of simply the food angle.

USDA also has an after-school program that gets healthy snacks to community centers to lure kids into a safe, supervised environment during the hours when too many get into trouble. We should encourage these programs to do more than sit kids down at board games or in front of the TV. Many do keep kids active, and I'd like to see more follow that example.

The schools can play a greater role, too. Twenty-five percent of children do not participate in any form of regular physical activity. Back when I was in grade school, kids got out and played tag and threw a ball around and had physical fun. We had a name for it, too: Recess. Today, they are rare in elementary school. Kids simply have a lunch break and sit around and eat.

USDA also is looking to expand our pilot efforts that help schools buy more fresh produce from local farmers. And, we are asking schools to offer 1-percent and skim milk in addition to whole milk. These efforts are important because if you look at kids' diets, they eat less fruit and drink less milk as they grow from early childhood through the teens. Less than 12 percent of high-school kids eat the recommended amount of fruit. Less than 12 percent of young women get enough milk. Although it's encouraging to note that the percentage of kids drinking lower fat milk has doubled.

Our challenge is to keep reinforcing the health message. But with milk, in particular, we need to recognize that different kids have different needs. A child from a family that has trouble putting food on the table gets a significant part of his or her daily food at school. These kids need the calories and fat in whole milk. But kids from more economically secure homes are the ones with the fast-food and other high-fat snacks more readily available. So the lower fat milk is the healthier choice. That's why today in a joint letter from USDA and the Centers for Disease

Control, we are urging America's schools to offer children a range of milk choices from skim to whole that support their efforts to manage their weight.

So government can play a significant role in encouraging healthy eating habits, as can teachers, doctors, nutritionists, and more. But unless families get involved, this epidemic will continue.

After all, the rise in childhood obesity, however alarming, should not shock us. Why? Because we can't simply scapegoat Al Bundy. Our kids soak up the wrong lessons not just from TV, but also from the one in three adults who are overweight. The apple isn't falling far from the tree, here.

Who is one of the most recognizable father figures in America? Homer Simpson. He sits on the couch, watches TV, drinks beer, eats chips, and falls asleep. Why's he funny? Because he has no shame, but also because despite his cartoon status Homer Simpson is a very familiar figure. As parents, we need to take a hard look in the mirror and ask ourselves: Are we setting the Homer Simpson example? If so, maybe we need to work on this as a family.

The only way kids will succeed is if they have access to healthy foods, there are less temptations, and there are role models that set the right example both with eating habits and exercise. Success almost always hinges on changing the whole family's eating habits which is good for everyone.

We also have to be careful not to make the problem seem insurmountable. Research has found that kids who break the challenge into small manageable pieces are most successful at managing their weight. And, since obese children lose and maintain their new weight much more effectively than obese adults, we have every incentive to reach our kids early.

Breaking the challenge down begins with separating the factors we can control from those we can't. We all know that person who can eat anything and stay a bean pole. We all want to be them, but we can't because most folks' genes don't work that way. Studies show that many obese children don't eat more than their thinner peers. They simply need less food and more activity.

But genetics alone can hardly account for our rapidly expanding waistlines. Poor diet, family lifestyle, and other factors often play the deciding roles.

Take the main reason we're here--television. Children are spending more time than ever glued to the tube. And, they're watching not just cartoons and sit-coms, but advertisements. Eighty percent of the commercials on children's programs is for food. And, we're not talking broccoli and spinach.

This media barrage clearly contributes to kids' eating habits. Fast-food restaurants are the most frequent source of food outside the home for teenage boys. They're about even with the

school cafeteria for girls. Two-thirds of teenage boys drink three cans or more of soda a day. Two-thirds of girls down two.

Among the 75 percent of kids who say they eat at least one vegetable a day, the most popular vegetable is--a potato...usually in the form of a potato chip or a french fry. Next comes tomatoes. When you get to the most nutritious veggies, like the dark greens, less than 7 percent of kids touch them.

The truth is more kids in high school fret about the quality of oil they put into their car than the fuel they give their own bodies. They change the oil and rotate the tires and do all these things to keep that car in good condition. But they don't have that same respect for their own bodies.

Turning that trend around won't be easy. Any cook will tell you: kids eat what they like and leave what they don't. They also often are averse to new foods. And, we know that the old "You can't leave the table until you eat your broccoli" can backfire because it teaches kids to tune out the internal voice that says, "I'm full."

And, when it comes to curbing bad foods. Well, any parent knows what's likely to happen when you tell a teenager not to do something. I can just see the next ad campaign: a stern father wagging his finger and saying, "Don't you dare eat those brussel sprouts, young man."

One trick is to get at kids early. That's why our nutrition education efforts--that concentrate on elementary and middle school--are so important. We can even start younger. Some studies show that kids in day care that see other kids eating veggies tend to give them a go themselves. We see this in infants, as well. What do parents do when the hanger doesn't open for the airplane? They take a bite to show just how yummy those peas are.

But my point is, we have to be innovative and creative, and recognize that our goal isn't to dictate to our kids, but to encourage them to make informed choices and adopt a healthy, active lifestyle that will dramatically enhance their quality of life.

I want to thank our many distinguished speakers who are leaders in this field, and have worked hard to elevate the issue of childhood obesity. I want to thank everyone who has joined us here today for what I hope will be the first of many gatherings. And, I encourage all of us to think of this not as a 1-day academic exercise, but the beginning of a long and important mission that we can only complete together.

It is a mission to protect and improve our children's future, and if successful, our reward will be generations of Americans who grow up to lead long, healthy, productive, and enjoyable lives. Thank you.

DR. ANAND: Boy, wasn't that a powerful message? I do not think we could ask for a greater message at this conference than what we heard from Secretary Glickman. Thank you, Secretary Glickman. We appreciate your message. It was wonderful.

SCIENTIFIC QUESTION-AND-ANSWER SESSION

DR. ANAND: I want to ask the panel to come back here and we'll entertain for the next 15 minutes your questions and comments. We will break for lunch, and we will come back and reconvene for the second part of this conference please. If you will come to these microphones.

Please identify yourself before you ask the question or make a comment. There are microphones set for both sides. Feel free to ask a question or make a comment on what you have heard this morning.

QUESTIONNER (from UC Davis): I love what I hear about the interventions at school and preschool. I am concerned though with $80 billion worth of advertising, within California, 12 hours--12 advertisements per hour of children's television for junk food, and about 2500 calories per hour advertised to children, if political action is necessary, in terms of controlling this.

We just heard we were not going to impound the chihuahua or get rid of the Happy Meal, but it seems to be a losing battle. There are not many parents in this village we are talking about in many cities in the country. There are not parents who intervene in their children's eating activities and television viewing activities in many homes that we are dealing with. I wonder if the panelists have any suggestions about political control.

DR. ROBINSON: I can address part of it. I have thought about this issue in terms of regulating advertising. I think you have to look back at the experience with cigarettes. There is still a lot of debate about whether it was a good idea to ban television and radio advertising for tobacco. It is unclear what the real results of that action were.

Right now, the tobacco industry seems to be saying, "Well, you are killing us with all of those advertising restrictions," while they are finding new ways to promote their products, like the internet, which may be even more effective at reaching kids and even tougher to counter with public health appeals.

So, I sort of worry about trying to regulate promotional activities, because I think commercial interests often find even more effective ways to promote their products. That being said, I do not know if there is an answer to whether regulation would work.

DR. DIETZ: One of the most influential papers that I have been thinking about recently was published by Len Epstein, *The Behavioral Economics of Food Choices or of Activity Choices.* One of the strategies that I do not think we have thought very carefully about is how to make the alternative of physical activity more attractive and television viewing less attractive.

Because every time we make a decision about what we choose to do, we balance the ease of one activity versus the ease of another. I think that as a general principle we need to consider ways of making physical activity more available, more fun, more of an option and television viewing less so.

Perhaps, the only way to do that, given the kinds of political complexities that reductions in T.V. time or advertising control will entail, the focus really ought to be on making the physical activity option more available and more attractive.

DR. ANAND: Go ahead, Barbara.

DR. MOORE: I just wanted to ask Dr. Dietz, and maybe Dr. Robinson, if they could just talk a little bit about the assessment issue. There were some remarks made this morning that I think

might confuse the audience into thinking--erroneously--that overweight in a child is defined as a BMI of 25 or greater. I just thought we should clear that up during this panel.

DR. DIETZ: That is a good point. Tom and I published an editorial in the *Journal of Pediatrics* in February that conveyed the results of a consensus conference held in Dublin a year ago last summer.

The consensus was that the cut points for childhood obesity should be those percentiles identified in young adulthood that correspond to a BMI of 25 and a BMI of 30, so that the cut points in children are concordant with the cut points in adulthood.

It turns out that a BMI of 30 identifies the 95th percentile in U.S. data, and a BMI of 25 identifies roughly the 85th percentile, so that the proposal is that the 85th percentile throughout childhood be used to identify overweight, and the 95th percentile of BMI be used to identify obesity.

As Dr. Moore so accurately points out, the BMI changes throughout childhood, but the percentiles will remain a constant. Use of those percentiles is the approach of choice to the assessment of the overweight patient.

DR. ROBINSON: It is also important to acknowledge that the morbidity associated with obesity is really continuous or curvilinear, in that, once you hit the 85th percentile it does not mean all of a sudden you are going to have those problems. Some kids with BMI's less than the 85th percentile have problems and some kids who are above the 85th percentile have no problems, and including social and psychological problems.

However, among kids who come and are seeking treatment, there usually is not much of a question there. From a treatment point of view, I do not see a lot of kids coming in who are hovering around the 85th percentile.

We are getting kids who are on average about 80 percent overweight, which is quite a bit more than you see in studies that were published 10 years ago, so right now you are really seeing the extremes in a clinical setting.

QUESTIONNER (from New Orleans): Two comments: One is the State of Louisiana has many firsts, and I think obesity is one of its major problems. And, interestingly enough, this has just been recently recognized by the State legislature. They have passed a resolution to set up a commission to look at the problem of both adult and childhood obesity, and I am a part of that commission.

Interestingly enough, once that had been passed, there are now about 25 legislatures around the country that are looking at the question of obesity as it affects their State. So, this may

be an opportunity for an interaction between the USDA, the Federal Government, and on a State level.

Because, obviously, the problems of childhood and adult obesity are major problems, both from a medical, as well as a psychosocial point of view. And so, I think this is something that should be looked at very seriously. I think one other thing that is important to consider relative to childhood obesity is the impact of childhood obesity on the psychosocial development.

Obviously, it is different for different cultural groups. But we have seen in our program at LSU and Children's Hospital, children who have been mildly, moderately, or severely overweight, who have been seriously affected psychosocially in terms of their obesity, so much so that some have been under psychiatric care and have been on anti-depressant medication.

With weight reduction, that significantly changes in terms of their own self-esteem and their depression scores. So, I think we should not underestimate the impact of childhood obesity on that parameter.

PANELIST: I agree, and I think we see that in our clinical practice, as well, that it varies from family to family. And sometimes lesser degrees of obesity are very serious psychologically in some families. And, on the other hand, very severe obesity is often not in other families.

But I think one of the problems is that there are very few clinical centers that are available to help these families, and that is something that I think we need to address in all of the States that we make help available to children who need it--both when they are beginning to have accelerated weight gain and those who are already very obese. That is somewhere where we could address the pediatricians in the helping, especially with the prevention, and also the treatment, improving their skills.

DR. ANAND: Yes, please go ahead.

QUESTIONNER (with the Center for Science and the Public Interest): Given the discussion about the negative impact of television viewing by children on childhood obesity and how much kids are watching T.V., do you think it would be helpful to require mandatory counter-advertising that would promote healthy foods on Saturday morning T.V. or during children's television programming to help balance all of the advertising for other foods that are not necessarily promoting children's health? How about Dr. Dietz?

DR. DIETZ: I was afraid you were going to say that.

QUESTIONNER: Because he represents government up there, you could not get out on this one.

DR. DIETZ: I think that it is unlikely that additional government regulation is going to make a difference in this area. We have to demonstrate that advertising linked to these products promotes obesity before we can make a convincing case that increased regulation is required.

I think, as I said earlier, we should be considering alternative strategies. One is, of course, making physical activity more available, safer, more attractive. But I also do not think that we have not made a compelling case to families about how important the regulation of T.V. time is.

One of the strategies that I think the American Academy of Pediatrics is exploring is a media literacy campaign. Children who are capable of intellectually deconvoluting the television messages; that is, who begin to process television on a cognitive rather than visual basis, become much more sophisticated T.V. viewers, and, perhaps, less affected by the advertising.

I think it is unlikely that we are ever going to have funds to do a counteradvertising campaign, but I think we can make a very convincing case for media literacy based in schools to teach children a lifelong habit of critical viewing.

QUESTIONNER: I am a nutritionist here in Washington, DC, retired from the District Government. My question is sort of a comment and concern. It was stated to us, and we well know, that high prevalency of obesity occurs in minorities.

I am aware that in the current NHANES Study there is oversampling of the minority population in order to obtain data. I guess my concern is will this be done in more studies? Dr. Birch mentioned that minorities were not included in the study that she reported to us today.

But in order to get the information we need, the minorities must be included in the studies, since, on the long-term, the costs in years, productivity, and money are going to be in the fact that we are having so many problems with the children and adults of minority populations, who have this high prevalence of disease.

Are we doing things now to study it so that we can help reduce the biggest problem that you see and you are reporting on but not studying? Does that make any sense to anybody? Is there anything that you can say to--I guess are the studies being developed so they will include more minorities now? Or will we need to seek some advocacy I guess? Or is that where we need to go with it?

DR. ROBINSON: There is interest in the scientific community. Recently, the National Heart, Lung, and Blood Institute had a request for applications for programs specifically targeting pre-adolescent African American girls to prevent obesity.

We have funding from the National Cancer Institute to take our OPPrA intervention and try tp apply it to two school districts that are about 80 percent Latino in San Jose, where probably

at least a third of the families are first generation immigrant families and very little English is spoken.

So it seems like, at least in my experience, the Federal Government has been very interested in funding this type of work. I think there is a lot more of it going on in children than maybe historically went on in adults.

QUESTIONNER: Thank you.

PANELIST (unidentified): I should say that we are also just beginning to do some focus group work and some pilot work to try to see whether some of the issues that we have seen that are issues for middle class white parents are reflected in the concerns of African American and Hispanic parents. It is something that we are doing in collaboration with some of the people in Dr. Dietz's group at CDC. So, we are trying to move in that direction.

DR. ANAND: All right, please. Please identify yourself.

QUESTIONNER (representing Howard University): Okay. Hello, everybody. My question is for Dr. Williams. Dr. Williams, what do you mean by the rebound adiposity?

DR. WILLIAMS: Well, the adiposity rebound was if you take the heights and weights of children, like if you have the heights and weights of children from birth through say 16, and then you calculate the body mass index, you will find that the body mass index goes up to about age 1, from birth to age 1, then it goes down to age 2, and stays down for awhile. And then for most children at about age 6, it begins to rebound. It begins to go up again. That is what they call the adiposity rebound.

QUESTIONNER (representing Howard University): Okay.

DR. WILLIAMS: But children who have that, when that occurs earlier, say at age 4 or 5, those children have a much greater likelihood of being obese as when they are older teenagers and young adults. The thing is we do not know a lot about what triggers that early adiposity rebound, but it is an area of new research. I think it will be interesting to see how diet affects that, and how physical activity, and other gene environment interactions.

QUESTIONNER (representing Howard University): Okay. I do have another question. As you can all see, I am fat. And I have always been like this all of my life. And it is very, very important, like when we are talking about behavioral modification, but on the panel I have not seen a psychologist or somebody to talk about anything.

Everybody there are like doctors, nutritionists, and things like that. But I think personally you know behavior modification is very, very important. Thank you.

DR. ANAND: We have psychologists.

QUESTIONNER: I am a nutritionist with Arlington County, and we work with the WIC population there. I have a question for Dr. Robinson and anyone else who would like to respond. As I look at the different programs cited, I wonder, Dr. Robinson, why are you choosing to work with third graders and up?

And, as Dr. Williams has proposed working with preschoolers, is there any program there at Stanford you are starting with preschoolers or any input that any of you would have as we put together a program?

DR. ROBINSON: Yes, we are actually exploring working within Head Start programs as well. Dr. Williams is probably one of the few people who is far ahead and has done a lot of work in that age group already. The reason for focusing on third graders was because it appears to be a critical period for the development of obesity--Dr. Dietz has published some work in the past on looking at what seemed to be the critical periods in the development of childhood obesity.

In looking at the tracking data, you see that kids who were overweight before puberty have a much lower likelihood of becoming overweight adults than kids who are overweight after puberty. There is also some evidence that the fat accumulation during puberty, that tends to be where, at least in boys, where you get a lot of abdominal fat deposition.

And so, the idea was to really focus on those kids in the preadolescent periods to try to prevent the weight gain that usually occurs with puberty, and at the same time try to prevent unhealthy weight regulation methods--we also do work in preventing eating behaviors in young girls. The preadolescent period seems to be a critical period to try to teach healthful weight regulation methods.

QUESTIONNER: I think the bottom line is that we really need good programs in preschool and all the way up through elementary, and junior high, and high school, and that at the present time the amount of health education, nutrition education that our children get is just insufficient, that we need really to begin early, and also work with parents and have it go through all of our schools. As they say, the dose makes the difference. At the present time, the dose is very low.

DR. ANAND: Please.

QUESTIONNER (with the International Life Sciences Institute Research Foundation): One of the most important things that I thought Secretary Glickman said was his challenge was to translate what experts know and to what people do.

One of the challenges we found as a research foundation is taking the information and implementing it into intervention projects, and disseminating projects that work, maybe a catch or

a spark curriculum, or what you are doing, Dr. Robinson, in implementing it on a nationwide scale. What are your thoughts on that?

DR. ROBINSON: Did you say me?

QUESTIONNER: Any.

DR. DIETZ: I will take a shot at that. One of our goals at the CDC is to disseminate effective programs to states. There are a number of those programs around, and I think the people at this table have been major contributors to those programs and their dissemination.

Dissemination is a complicated business. For example, school-based curriculum changes are not easy to achieve and have to compete with other school-based curricula. I think Chris William's and Tom Robinson's data provide a very compelling case for why those curricula should be altered, but the actual changes have to be local. It is the local school boards or the teachers themselves who make those curriculum changes. How to get their attention is a significant consideration.

DR. GORAN: I think also--that is a very good point, but I think there is a lot more research that needs to be done to identify what the optimal strategy is. And, furthermore, I think one of the biggest barriers in implementing whatever intervention we come up with is, the distraction in the school day are the hours that are lost in the school day and convincing the school authorities locally and nationally too - that that use of time is a worthwhile investment, not only in the future health but possibly also in the future academic performance of the children.

DR. ROBINSON: I was going to say we have gotten into some dissemination research, but it is very difficult to get funded. It is also very difficult to do. I think there is very little that has been done. There are several models of how new programs or innovations diffuse into practice.

Most studies that have been done show that you really lose a lot of the fidelity of delivery as those programs do diffuse, and usually you lose your results with that. And so, a lot more work needs to be done in how to maintain fidelity when you go outside of an efficacy study and start diffusing things more widely.

DR. ANAND: I am going to take one last question. Before I take the last question, I would like to acknowledge the presence of Dr. Eileen Kennedy, who was the past Executive Director of the Center. Thank you. All right. Go ahead, please.

QUESTIONNER: I teach nutrition at Prince George's Community College. I would like to make a comment. As you know, there are differences in lean body mass among various racial groups. I wanted to know how do you use body mass index to identify normal weight, overweight, and obesity among the various racial groups. Do you take that into account?

DR. DIETZ: In the assessment of obesity, we published clinical guidelines about 4 or 5 years ago, which began with the use of a body mass index but confirmed that the excess weight was fat with a skinfold measurement. You are absolutely right, there are significant body composition differences.

Mike has examined body compostion in young children. There are some data which suggest that at the same BMI, African American girls have lower or the same body fat, suggesting that ethnic differences in BMI max relate to muscle mass and bone density, and emphasize even more how important it is from the clinical assessment point of view to confirm the effects of an increased BMI with a skinfold measurement to demonstrate that the excess weight is fat.

QUESTIONNER: Can I just add one more comment: So what do you tell people that are using 25 as the cut off and that may not actually be accurate for an African American? The only reason I ask is because when my students are measured and they are higher than 25, they are quite concerned.

DR. DIETZ: Well, remember that a BMI of 25 to 30 is overweight. In an adult that suggests that unless there is existing comorbidity, it may be most appropriate to try to maintain weight at that level, not lose.

I think increasingly the obesity treatment community is moving towards a BMI of 30 in adults as the cut point for treatment regardless of whether a comorbidity exists or not. That was the recommendation in the NHLBI guidelines for the treatment of obesity which just came out.

DR. ANAND: We are going to recess now. You have a choice to either have food or play. So, please, we are TO reconvene exactly at 1:45. Again, we have a very exciting program for this afternoon. Thank you very much.

AFTERNOON SESSION
PERSPECTIVES ON POLICY IMPLICATIONS AND RECOMMENDATIONS

Introductions by Rajen Anand, Ph.D., Executive Director, USDA Center for Nutrition Policy and Promotion: We are going to hear different perspectives of what are the policy implications and what kind of recommendations we can take from this conference and do something about childhood obesity. I think we are all convinced this is an epidemic problem, and we all have to work together to do something about it.

Introduction of Dr. Donna O'Hare

Dr. O'Hare is the Clinical Professor of Pediatrics at New York University School of Medicine and Associate Director of the Children's Chest Clinic at Bellevue Hospital, New York.

Dr. O'Hare graduated from Sarah Lawrence College and received her M.D. from New York University. Dr. O'Hare's experiences have provided her an expertise in maternal and child health issues. She has received numerous awards for her long commitment on these issues.

And, most notably, she was instrumental in securing passage of legislation in New York State that reduced the infant prematurity and low birth weight. Please welcome Dr. Donna O'Hare.

Presentation by Donna O'Hare, M.D., F.A.A.P.
American Academy of Pediatrics

The Role of Government Programs in Reducing Childhood Obesity

Donna O'Hare, M.D., F.A.A.P., American Academy of Pediatrics--This is a wonderful challenge today, and I cannot thank USDA and Under Secretary Shirley Watkins enough for being able to present this program. It has been needed for a very long time and it is very appropriate to develop recommendations that we can suggest that could be utilized by USDA and other government agencies and really move forward on the issue of preventing childhood obesity.

The first thing I would like to say is I have left what I think are some important reprints in the back at the registration desk. They are efforts of partnership and collaboration that the Academy of Pediatrics and government agencies have performed over the last few years.

Perhaps, we should be asking what else the Academy can do with our practitioners and with health care providers to improve their assessment and treatment of obesity in children. That is not the role I have been given today, even though I will mention it at the end.

The materials that I have left have been the American Academy Policy Statement on Breast-Feeding; the Children Adolescent and T.V. Policy; Physical Fitness in Schools; Assessing Activity and Fitness in the Office; a Statement on Cholesterol; the *Pediatric Supplement,* from March of 1998, on the causes of health consequences of obesity in children and adults and the September issue of *Pediatrics* with an article of Obesity-Evaluation Treatment by an Expert Committee. This effort was brought together by the Office of Maternal and Child Health and was authored by Dr. Dietz and Dr. Barlow and provides recommendations for the treatment of obesity in childhood.

We hope that all of these policy statements from the Academy are translated into practice, not only by pediatricians, but by other professionals that are caring for children. In addition, there have been some fascinating joint collaborations that I think you should know about.

One is *Fit for a King,* a joint nutritional education program, not only done in conjunction with the Academy of Pediatrics, but also with ADA, the Sugar Association, and sponsored by the National Cattleman's Association.

As we look around for other partners, I think we have to look very broadly. I think the broader we look, the more information and the more money we will be able to get to fund some of these initiatives.

The second is the State Child Health Insurance Evaluation Tool. As you know, Congress passed the State Child Health Insurance Program last year. It has been put in place. It leaves each State with a great deal more money than they have had before to support child health programs.

There is an evaluation tool, which I think is essential for any program that the Federal Government undertakes, to make certain that their programs are. This evaluation tool was developed by a multidisciplinary committee.

In addition, there is a chapter from the American Academy of Pediatrics Nutrition Handbook. I do not know how many of you have utilized that handbook. It is in its fourth edition. Some of the physicians here today are part of that group that have formulated these guidelines.

I think the last document that we'll mention is the Federal Interagency Form on Child Health and Family Statistics. I think these are all helpful in evaluating where we are going, and where we have been, and just what the problem is from the data that currently is being collected. The morning presentations identified the need for additional data to evaluate the impact of programs.

Currently, obesity is more prevalent among children raised in urban communities and smaller families, and the family constellations over the years have changed.

How many children do you know that have breakfast today with their mother, father, or just with their mother? How many children do you know that have a dinner and sit down together today? I do not think that occurs very often. This is an important issue we need to look at. What are the behaviors and patterns of what is going on in the family constellation today, which is very varied across the country, and how do they affect childhood obesity.

The revised CDC growth charts that are due late in '98 will provide an educational tool, and an opportunity for more outreach and education to parents and to professionals to better assess nutritional status. The current growth charts that we use, which certainly are not adequate, go as far back as 1977 data.

Unfortunately, as we heard earlier this morning, there is no definite reliable approach that exists to the prevention of obesity or its successful treatment. Small reductions have been made and body fatness may result in significant diminution of adiposity-related morbidity.

Certain individuals may be medically healthy, at higher fractional body fatness, than is held to be ideal by the current cosmetic norms of Western society. The composition of the "ideal" or the most healthful diet is truthfully not completely known. Our current knowledge of the effect of diet on morbidity is largely based on adult studies, with few pediatric studies.

The presumption at this time is logical, that a diet containing at least minimal recommended amounts of protein, essential fatty acids, vitamins, and minerals, and that is low in saturated fats as specified in AAP statement on cholesterol in children, coupled with regular exercise will diminish the severity and likelihood of the development of risk factors such as hyperlipidemia, even though the body composition may not be affected.

We need to keep in mind that obesity is a complex disease with not only genetic but metabolic and behavioral determinants, which have been clearly spelled out this morning, and obesity results from an imbalance between the intake and expenditures.

New research and further research is needed as was expressed by some of our researchers this morning. The basis for more informed counseling and prevention efforts need to be made. Studies that show adherence to weight reduction programs have emphasized the importance of a family-oriented approach.

One study of 55 children, by Dr. Epstein in 1990, did show a 10-year follow-up of three groups they followed 10 years after they had one of three programs. The first group of children and their families received therapy targeted both toward the parent and the child--weight loss, as well as behavioral modification. The second group, therapy involved only the child with reenforcement directed toward weight loss and behavior change in the child. The third, a control group, only attended group meetings. These activities were carried out in 14 therapy sessions in 6 months, all receiving identical information about diet, exercise, and behavioral principles.

During the initial treatment period, all children were placed on diets of 1200, 1500 calories per day and lost weight to within 5 to 25 percent of ideal weight. Children in the parent- and child-targeted group were on the average 42 percent above the ideal weight on entrance into the study, and 34 percent above ideal weight 10 years later in follow-up. In contrast, the other two groups were approximately 44 and 46 percent above ideal body weight at the beginning of the study, and 48 to 60 percent above ideal weight at the 10-year follow-up period.

Although not ideal, the family-oriented approach did result in a modest sustained loss of weight in the 6-month group trial, and a significantly lower level of body fatness, but not of the subjects in other groups.

We have numerous federally-funded programs that have in the past looked at diet and obesity, and some of them should be looked at again to decide whether they should be implemented.

Personally, I feel the USDA WIC Program model has been a success. Number one, it did have an evaluation component 2 years after it started. It then expanded until it became countrywide, and I think that is important. Second, it did make the first effort a number of years ago toward beginning to have a national policy toward breast-feeding in collaboration with over 52 other groups, which included the Academy of Pediatrics, NAWD, AMA, AAFP, Better Business Bureaus, APH, and others.

It certainly was a major effort with a consortium to address a national problem in this country, because based on scientific data that shows breast-feeding benefits children and their mothers. If their parents knew about it maybe they, too, would agree and go ahead and breast-feed. After a lull in between administrations, the new group reconvened and it has become very active. I want to thank both Shirley and her staff for all of the work that has been done. USDA has funded a program called "Loving Support." This consortium really consists of professionals, nonprofessionals, and lay public to promote breast-feeding. It has had focus groups across the country to develop educational packets for parents and for professionals.

We have seen an increase in breast-feeding. There are benefits to our society, not only as far as cost is concerned, but in preventing disease later in life. This is a model that we can utilize in combatting obesity, by including government agencies and many other groups caring for children, including community groups.

These efforts do not happen overnight. Unfortunately, it takes a long time. This group has taken over 8 years to get where it is currently. So, I do feel that not only has WIC been effective in promoting the health of pregnant women and their infants, as was shown in 1990 studies and subsequent studies, but I also think it has proven that these women have longer gestational periods, higher birth weight, and lower infant mortality.

In addition, there is a nutritional component to this that I think needs to be expanded, as well as someone has mentioned today on the panel, a physical activity component. I do not believe we can start this education once the child is born. I think we have to start it as soon as the parent is pregnant or considering parenthood.

The woman, generally, is most vulnerable at this time. They are more accepting of new ideas and understanding the importance of what may happen to their child. My suggestion is that we include more education in this period and carry it out as the child is born and in preschool.

The WIC Program is unique in another way. It integrates referrals for medical care. It is not only a nutrition education program, it is not only a voucher program to provide good nutritional foods, but it also is a referral to the medical home. It provides a coordination of efforts that are best for the child. I think it works both ways, and we need to learn how to better communicate and coordinate with medical providers on immunization levels and other things, so there is less duplication within these programs.

I believe the WIC program currently covers approximately 60 percent of the eligible children in this country. Our goal should be to cover all eligible children. We all need to ban together for 100 percent of eligible children.

The WIC Program also includes the WIC's Farmers' Market Nutrition Program since 1992. Additional coupons are made available for the purchase of fresh fruits and vegetables at participating farmers' markets. It is in 32 States currently, the District of Columbia, and two Indian tribal organizations.

Under Secretary Shirley Watkins mentioned those many Indian tribal reservations; the fact that they cannot grow produce on their reservations, therefore, the Department of Defense is bringing in food. This is the highest form of collaboration and should be expanded. I have to compliment the outreach that has already been made by her energy and her staff's energy, and hope they continue to find new and creative ways to expand the program to all of our States.

There are some new provisions in WIC, which should concern us. The American Academy of Pediatrics is pleased to see that fresh fruits and vegetables have been included in the food package. The implementation will be important. The question is, how will that effect the cost? Many of us who are homemakers and go to the store realize that these kinds of diets are more expensive than some of the others. If the cost of the package goes up, hopefully, we will still have enough money for the nutrition services, as well as the administrative services. So, I think we all

have to watch these changes as they occur and as they develop because we do not want WIC to stop achieving its goals.

Mention has been made already of day care and Head Start and programs in schools. After pregnancy and after the first 2 years of life, I really think the next thing we need to evaluate is what caretakers, day care, Head Start Programs, and schools are doing concerning nutritional foods and education. It has already been mentioned today, as to how they can play a role, both in nutrition education and also in physical activity. Schools have to take the responsibility, more than they have in the past, and also have to provide more physical activity opportunities for their students both during and after school hours.

There is always this idea of, well, it is at the local level. Well, the funding is both Federal and local. I think we have to insist that you do not cut out physical activity in the school, because there is not enough room. Somehow, there has to be room somewhere in that community where those children can have opportunity for adequate physical activity. We have been too easily swayed by people saying there is not enough money, and we do not want any higher taxes. Different communities can handle this in different ways. We need to really mobilize at the community level to see that all of our school boards understand the science and the importance of both nutrition and of physical activity.

Another recommendation that I would make is to provide technical assistance to school boards. This might be very helpful in developing creative ideas and new ways of doing things. I think that we have to seek new partners to help us, whether they be a real estate agent who cannot possibly sell that building for 10 months or someone else at the community level.

Television and computers are important risk factors. The Academy of Pediatrics has a statement on television; it does not have a statement on computers yet. My perception has been from the patients I see, that I see them spending even more time now on their computers and television than they did before. This is disturbing, because it means children will be more sedentary. I think we do have to evaluate this in the next few years. The Academy has stated and recommends very strongly that television should be limited to no more than 1 to 2 hours a day, and families should participate in the selection of the programs. This is certainly not abided to in many homes. The television set is used most often as a babysitting service in many areas of this country, and I really think we need to look at that very carefully.

The Academy of Pediatrics supports the vision to explore the feasibility of establishing a universal school breakfast program and not just one for children in need economically. Particularly, at the elementary school level, where we feel that the steady intake of calories meets the needs of growing bodies--and these children are unable to obtain it without the assistance of an adult.

One thing that has bothered us, and I know there is controversy on this issue, is the fact that Channel One (in many schools), but in some schools, that provide both the television, the

monitors, and all of the lovely things that schools say they cannot afford. However, the programming does include advertising. The advertising is by commercial advertisers and not necessarily in the best interest of children. I think we need to look into those schools. We need to get PTA's involved in monitoring what is being done and what is going on at the school level.

Day care and Head Start programs, as well as these schools, have to take this responsibility, but I also feel the PTA could play a more important role than it has in the past. This is easy to say, hard to do.

Most families are working today. I think that is very difficult, because the mother is rushing out, the father is rushing out. Do they have time to take a day off to go to school to monitor and see what goes on? Although it may be difficult for many families across the country, we are going to have to find some way to involve more parents.

The School Breakfast Program has already been mentioned, and patterns in eating as you know have drastically changed the past few decades. How often do families truly sit down for meals together, particularly breakfast, which may be the most important meal?

Breakfast eaters in studies have shown they tend to pay closer attention in school, likely to make higher grades, if breakfast contains a complex both of carbohydrates, protein, and high calcium foods. The School Breakfast Program can play an important role in improving academic functioning among low-income children and elementary school children.

Currently, the breakfast program provides care to over 7.2 million children in over 70,000 schools with cash assistance. I think it is important that this is still a fiscal eligibility issue and we really need to look at it more broadly, because some of those children with both parents working do have a difficult time of getting adequate nutrients.

An exciting collaborative effort to provide guidelines on health, mental health, and safety of students and staff in elementary, middle, junior, and high schools is beginning in the spring of 1999 and will last up to 2 years to develop.

It is funded once again through a coordinated effort, a cooperative agreement with the Maternal and Child Health Program in HRSA and the Academy of Pediatrics. It will address the recommendations for nutrition, as well as the urgent need to care for children with special health care needs, as well as other health problems. Physical activity, nutrition, and safety will be included. They are currently looking for expert panels. This truly provides another opportunity to emphasize the importance of diet and physical activity. The projects goals are (1) to identify and incorporate resources that are available both for health and safety; (2) to build consensus and coalitions toward the acceptance of guidelines among national organizations (which sometimes is extremely difficult); (3) to produce a document with guidelines and recommendations; (4) to provide training and technical assistance; and (5) to evaluate the project.

Sometimes we are held up 4 to 5 years because we cannot come to a consensus. I think many of us have been involved in that kind of an activity. This document will provide guidelines and recommendations, and the project will provide training and technical assistance, which is a piece very often left out in the implementation of programs, both the State health and educational agencies. There will be an evaluation of the program to document the impact.

The USDA also provides the Summer Food Program, which needs a nutritional component added to it.

The USDA Childhood Adult Care Program provides help in meals and snacks. Once again, can we strengthen this program with nutrition education activities? Certainly, the education and training funding for nutrition education and training programs has not kept pace with inflation.

The Academy of Pediatrics urges the provision of adequate training of staff in all programs to ensure that children receive quality nutrition education, which should help improve the health of their lives, as well as reduce the societal cost of diet-related diseases and conditions. This education is also needed for teachers, parents, and child care providers. We would like to see this effort expanded, and I think there is enough data to support expansion. The research needs have already been discussed today. The NIH could provide additional research on childhood obesity and its affect of adult diseases. Research questions are highlighted in the *Pediatrics* journal supplement, such as does the risk of obesity-associated comorbidity vary with age of onset, duration, or severity of childhood obesity? This is a very important question and there are many others.

There is no time left to discuss the new State Child Health Insurance Program. I need to take the opportunity to request that we all work together to develop a comprehensive benefit package that is the same across the Nation. States have the option for flexibility in their model, but we must insure that basic benefits are in that package. One of those items is growth and development nutritional assessments. This is extremely difficult when managed care or some of our programs allocate only 15 minutes per patient and demand that you only see a child one to three times a year depending on their age.

There are many recommendations and challenges before all children to achieve their maximum potential.

Introduction of Connie Evers

DR. ANAND: We are going to move to a topic that is very close to our heart. That is the Child Nutrition Programs: Prevention Through Education. Presenting that topic is Connie Evers, who is a registered dietitian, consultant, author, and both local and national media spokesperson specializing in the issues pertaining to health of children and adolescents.

For 6 years she worked as the Nutrition Education Coordinator for Portland Public Schools in Oregon. She received her B.S. from the University of Nebraska and an M.S. in nutrition from the University of Iowa. Ms. Evers currently works as a Nutrition Education Consultant to schools, universities, and State agencies throughout this Nation developing programs, writing materials, and providing hands-on training to educators, school food service professionals, and caregivers.

No one, perhaps, can speak better than her on the issue of child nutrition programs, prevention through education. Ms. Evers.

Presentation by Connie Evers, M.S., R.D.
American Dietetic Association

Child Nutrition Programs: Prevention Through Education

Connie Evers, M.S., R.D., American Dietetic Association--I am pleased to be representing the American Dietetic Association (ADA) today. It is an organization of 70,000 food and nutrition professionals. The ADA has a deep commitment to the health and nutrition of America's children.

The ADA's Child Nutrition and Health Campaign has reached parents, teachers, nutrition professionals, and the media for the past 3 years with positive messages and helpful resources for educating today's children about healthful eating.

It is the position of ADA that all children and adolescents should have access to adequate food and nutrition programs regardless of economic status, special needs, and cultural diversity. In other words, every child is important.

Appropriate child and adolescent food and nutrition programs include not only food assistance and feeding, but also nutrition education, screening, assessment, and intervention, resulting in a comprehensive approach.

Federal child nutrition programs can make a difference. I have worked in some capacity in child nutrition programs for the last 11 years. There is a tremendous opportunity to influence the eating habits of children via the School Breakfast and Lunch Program, the Summer Food Service Program, the Child and Adult Care Food Program, the WIC Supplemental Feeding Program, and also the nutritional component of the Head Start Program.

According to the USDA "What We Eat in America" survey, more children are eating away from home. They are not all eating at school, but a lot of these calories are coming from school, including one-fourth of the total calories for 6- to 11-year-olds and one-third of the total calories for children ages 12 to 19.

Surprisingly, one-third of America's children get more than 40 percent of their total calories outside of the home. Schools and child care agencies are definitely part of the "village."

While good nutrition starts at home, we can do a lot through these programs as well. Schools and child care programs offer the only opportunity for many children to choose a healthful, balanced meal in a day's time. I have seen the children lining up on Monday morning for school breakfast, because they have not had a regular meal all weekend.

I hear so many times from parents and other people that this is the parent's job. And, yes, it is, but schools must act as well. It points to an even greater need for these programs to be accountable for healthful menus, as well as nutrition education.

It is a simple equation. Nutritious meals plus education equals healthy kids. We absolutely, positively need both. I am by training and practice a nutrition educator, but I cannot go out and talk about nutrition education when people do not have access to nutritious, healthful food.

On the other hand, we cannot serve wonderful, healthful, balanced meals in the schools without the support of education. It does not work. The following examples illustrate the value of education and promotion in getting kids to try new foods.

A few years ago, when we put kiwi fruit on the school menu, the kids had no idea how to eat it. With a partnership with the New Zealand and California Kiwi Fruit Commissions, we received donated kiwis and educational materials. We went into every classroom. We showed children how to eat kiwi fruit in a very simple manner. We showed them how to slice the kiwi in half and eat it with a spoon like a grapefruit. Kiwi fruit became one of our most popular menu items in the public schools.

Another example is garden burgers. Again, we wanted to offer all children a choice, not just the vegetarian children. Because Wholesome and Hearty--manufacturer of Garden Burgers--has their headquarters in Portland, Oregon, we were able to get baby garden burgers that we could have students taste test and then place on the regular menu. In one suburban Portland school district, they have garden burgers as a choice every day, along with the regular hamburgers.

When we put baked potatoes on the menus, they initially were poorly received. When we went into the cafeterias and talked to kids, they did not know what to do with the baked potato. They did not know how to eat it. The same was true for foods such as fresh spinach and sprouts.

Like Dr. Birch's research so eloquently points out, children need repeated exposure to new foods. A food needs to be placed on the menu several times before children may try it.

An effective nutrition education program for children promotes positive experience with healthful foods. When I talk with kids in the classroom, I do not talk about obesity. We talk about having fun with food, trying new and different foods, and having fun with play and physical activity--a positive approach.

Children can gain experience by tasting, preparing, learning about, and even growing a variety of healthful foods. I write a column for the *School Food Service and Nutrition* magazine. The piece I just finished is on school gardening.

I talked to school food service people all over the country who are incorporating school gardens. If you want to get kids excited about eating vegetables, have them grow their own. They feel ownership. Kids also get excited about eating healthful foods if they are involved with cooking. We need to involve kids. Empower kids by having them be the decisionmakers about foods.

The components of effective nutrition education include making nutrition fun and engaging; integrating nutrition across the curriculum, home, and community; and emphasizing behavior change.

When teaching children, ask yourself, "Am I having fun?" Sometimes as adults, scientists, or researchers, we need to get down and think like the kids. If we are having fun with food, the children most likely are, too. If we are bored and the kids are bored, then that is not a good sign.

Of course, nutrition education needs to be integrated. Activities and strategies must be integrated with the meal service and across the curriculum in every subject. Nutrition can be taught in every subject and integrated within the home and the community environments. One of the things that I really want to put to rest is the myth that kids do not like vegetables. When vegetables are prepared well--fresh and tasty--kids enjoy eating vegetables.

Nutrition education must be behavior-oriented. Children should have the opportunity to practice good nutrition habits. They need to be able to integrate good nutrition into their daily habits. That is why that school cafeteria, or the environment of a family day care, or a Head Start Program, or wherever the children are, must have that healthy meal and nutrition component.

We have to look at all facets of the school environment. Again, this might be a simple issue, but the answers are complex because there are so many issues involved.

A report from the CDC titled "The Guidelines for School Health Programs to Promote Lifelong Healthy Eating" is an excellent document. I urge all of you to get a copy of this report. It is a very helpful blueprint for how schools can start to look at their whole school-wide environment.

A school committed to good nutrition has policies that promote an environment where kids do not have continual exposure to vending machines, competitive food sales, after school cookie sales, and candy bars to raise money. All of these factors add up to a continual competition with our healthy meal program.

Again, we can put fresh spinach salad, kiwi fruit, and garden burgers in our program, but if we expect children to choose those foods over continually competing foods from vendors and school stores, it just will not work.

There is nothing wrong with those foods. All foods can fit into a healthy diet. But when I walk into schools, unfortunately, I do not see the preponderance of the healthful foods. We need to offer mostly healthful choices, and we have to have a school policy that reinforces that.

We need to look at funding issues. This is more complex than child nutrition. Many of our schools do not have the money it takes to run the academic components, so they are looking to other avenues of revenue.

Let's discuss nutrition education in America's schools. We are losing our "safety net" as we witness the unfortunate loss of NET money. Dr. O'Hare discussed the WIC model and I will refer to it also, because it is a wonderful model for nutrition education and food assistance.

Nutrition education is built into the WIC program. The counselors serve as gatekeepers to identify more serious problems requiring medical nutrition therapy. All clients are seen and receive follow-up counseling and nutrition education.

This is in contrast to the nutrition education for early childhood and elementary-aged children. Our "dose" of nutrition education is too small. We have gained ground in some areas. Thanks to efforts by Under Secretary Watkins and Secretary Glickman.

But while we have gained ground, we have lost significant funding and resources as the NET Program has continued to dwindle through the years.

USDA Team Nutrition is a wonderful and significant model for promoting a healthy school environment. But, unfortunately, it will not replace or substitute for the NET Program. Unlike NET funding, Team Nutrition grants to States are competitive and they are subject to change each year.

NET has been a tremendous resource over the past 20 years. Even at full funding, which was 50 cents a child, the program carried a very modest price tag. Throughout my career working with kids, I have always said NET is a program that does a lot with a little.

Let me give you a few examples of some programs that I personally work with. I travel the country working with State agencies and schools. I learn a lot about what they are doing and how they are innovatively using NET and other resources.

In my home State of Oregon, one of the things we did last summer for the first time was to pilot a nutrition education program called "Camp Eat Well." We are working out the kinks, and we are going to come back with an even stronger program next year. Everybody participating in summer food will have the opportunity for nutrition education.

In Oregon, we have Food Pyramid Choice Menus (FPCM) in many of our schools. In the elementary schools, kids have a variety of fruits, vegetables, and grains to choose from and multiple entrees. What has happened in our FPCM schools is that garbage has gone down and our fruit and vegetable intake has gone up, mainly because kids are self-selecting. Given a variety of healthful choices, children will choose a healthy diet.

A few years ago when I was employed at the Portland Public Schools as the Nutrition Education Coordinator, I discovered that there was a missing link in the treatment of obese children. We had elementary school counselors who were very concerned about obese children in their schools but lacked the training and resources to do much about it.

So, with a NET grant at that time, we brought in local community people who were involved with Shapedown and other child obesity programs. We held a training for the elementary school counselors, so that they would have a network for referring children and families.

As a result of the training, we had many of the counselors in our 93 schools start their own healthy kids club. All children were able to join the healthy kids club, where they would learn about healthy eating and they would walk and exercise together.

So, again, we have to look at our infrastructure and how we can play into that. The counselors wanted to do something, but the link was missing. We were able to provide the link with our local community.

In Pennsylvania, a NET grant has funded a statewide K-6 curriculum called Every Day Lots of Ways (EDLOW). They have used their NET money to devise a curriculum that matches the Pennsylvania Department of Education's core curriculum.

Almost every State has a core curriculum developed by the Department of Education. If we want nutrition taught in schools, we have to work within the structure of that curriculum.

In Illinois, they have a network of three NET Centers. So nutrition education is not just centered in suburban Chicago, it is also provided in Southern and Central Illinois.

In Montana, a large State with few people, they use a system of videoconferencing, where they hold conferences and they satellite them out to 12 sites throughout the State.

The epidemic of childhood obesity needs to be tackled on many fronts. Federal child nutrition programs can have a significant and lasting effect, but we need money and support for nutrition education and physical education.

We need to optimize our resources. We need to look beyond our traditional nutrition education model and look toward creative and innovative ways to motivate kids. We need a comprehensive policy that brings together all government agencies.

Today, we are doing just that with CDC, USDA, and hopefully, the Departments of Education and HHS. We need a policy that fosters public/private partnerships that use proven approaches to effectively target kids. We must all work together--government agencies, schools, Federal and State legislatures, industry, nutrition professionals, teachers, caregivers, and parents --to create an environment where our kids can succeed and go into an adulthood with a healthy outlook and a healthy weight.

Finally, I want to tell you about the State of Rhode Island. They have an outstanding model for nutrition education. They have partnered with Hasbro, the Alan Shawn Feinstein Foundation, Team Nutrition, Tufts University, the United Way, and with the Rhode Island Department of Education.

They have formed a corporation called Kids First, where they disseminate nutrition education programs. When I talked to Dorothy Hebert, who heads this program in Rhode Island, she said they have 35 of their 36 school districts in Rhode Island signed on this program.

They have received four Team Nutrition training grants. They incorporate chefs, farmers, and agriculture, just about every agency and group imaginable in this program. They are directly reaching children, teachers, and parents. It is a wonderful model, but, we need continual support for these types of programs. The grants are competitive, which means there are no guarantees of continued funding.

There is a Federal understanding of this problem. I would urge all of you to log on the internet and go to the Healthy People 2010 site to comment on the proposed draft objectives.

This is only one objective of many that addresses nutrition. But I thought this was a metaphor for where we are right now. "Increase to at least _____ percent the proportion of the Nation's public and private elementary schools that teach all essential nutrition education topics to their students in at least three different grades."

How will we ultimately fill in this blank? What priority will we give to America's children? I hope we do not return in 2010 with even more grim statistics. Now is the time to act for our children. Thank you.

Introduction of Dr. Barbara Moore

DR. ANAND: The next presentation is by Dr. Barbara Moore, who is going to talk about Choosing Policy Strategy: The Carrot or the Stick?

Dr. Moore is President and Chief Executive Officer of Shape Up America, a national initiative to promote healthy weight and increased physical activity. Dr. Moore earned her undergraduate degree from Skidmore College, a doctorate in nutrition from Columbia University, and did post-doctorate training in nutrition and physiology at UC Davis.

Dr. Moore has developed an expertise in areas of both obesity and nutrition policy by integrating her work gained in academia, private industry, and Federal Government. I would like to add that after Shirley Watkins' inspiration, Barbara's support for this symposium was extremely great and we really appreciate all the support she gave. Dr. Barbara Moore.

Presentation by Barbara Moore, Ph.D.
Shape Up America!

Choosing a Policy Strategy: The Carrot or the Stick?

Barbara Moore, Ph.D., Shape Up America!--"We know your theory is crazy. The question is whether it is crazy enough." Neils Bohr. I want to thank Under Secretary Watkins and Dr. Anand for putting together this symposium today and for inviting me to share my thoughts with you. You can decide for yourself whether or not my ideas this afternoon are crazy or not.

In my remarks today I am going to argue that childhood obesity is a marker. It is a marker not just of the deteriorating health of children, but also of families and communities, and even of society at large.

I am going to argue that the problem is not so complex that it is insoluble, but it is sufficiently complex that it must be tackled on many levels and certainly not just on the level of the food supply as has been suggested.

It has recently been argued that to combat obesity we should establish policy that would use the force of law, or the power and prestige of the government to wield a stick, perhaps, a tax, on so-called bad foods.

Let me quickly dismiss the use of the stick on the grounds that it is borne of a "good foods versus bad foods" ideology that I do not subscribe to. It requires a food police and a court to decide what is good and what is bad. It alienates people from food, it promotes guilt, and it undermines the enjoyment of life.

If States are going to tax soda, and several of them have, in order to raise revenues, that is their prerogative. But the lawmakers should not pretend that that tax is going to prevent obesity in children. A tax on foods avoids the more serious challenge that simply must be faced if obesity is going to be averted.

People have to change the structure of their communities and of their lives in order to pursue a more active lifestyle and in order to construct a more healthful diet. If we are going to use the carrot--incentives or rewards--the question is where do we apply those incentives, and what is the basis for choosing one strategy over another in order to prevent childhood obesity? To answer those questions, I believe we need to take a hard look at our culture as a whole and examine the ways in which it is impacting children and teenagers.

A powerful exploration of the impact of culture on teenagers in America is presented in a book called "Reviving Ophelia" by Mary Pipher. Pipher argues that cultural forces are hurting teens. These include destruction of the family, high divorce rates, instability of parenting roles and responsibilities, the mindless portrayal of girls and women in the media, especially when sexuality and violence are closely linked. Sexuality is rarely, if ever, linked to constancy and commitment.

The narrow range of body sizes and shapes that are considered "mediagenic," coupled with a growing awareness on the part of teens, of how their own bodies simply do not measure up to the ideal glamorized by the media.

The cultural obsession with thinness among children and teens is layered on top of a widespread lack of understanding of energy balance, ignorance of what constitutes a balanced diet, and a growing distaste for physical activity during the adolescent years.

[Research shows that] the activity levels in females are consistently lower than those of males. Levels of both moderate and vigorous activity are declining in both genders throughout adolescence.

Even for those who still enjoy physical activity, physical education programs and facilities are increasingly scarce in the schools, as other speakers have mentioned. Moreover, sidewalks and parks in the community are absent or unavailable for recreational purposes.

This cartoon depicts a secretary saying to her boss, "Your daughter called. You promised you would play phone tag with her today." In a national poll conducted by Shape Up America! in

1995, child care responsibilities were cited by one-third of all respondents as a barrier to increased physical activity.

Yet, a sedentary lifestyle and obesity afflict both the young and the old alike, and family life is rarely, if ever, centered around genuine as opposed to "virtual physical activity," depicted in this cartoon.

On the other hand, if we encourage families to be more active together, then we have to address the issue of how and where they can be active. They need safe neighborhoods and affordable facilities to support physical activity.

Now, urban neighborhoods are often unsafe for simple activities like walking or jogging. The problem of neighborhood safety is more of a barrier to physical activity as income decreases.

Lack of neighborhood safety is associated with a higher BMI. [Research shows that] fully 50 percent of lower income Americans identify a lack of affordable recreational facilities as a barrier to physical activity.

That is why any park or school gym has to be regarded as a precious resource that needs to be protected and made available to the public, preferably, throughout the day and evening to accommodate a variety of working schedules.

For many people, recreational facilities are simply not available. [Research shows that] even a basic facility, like a sidewalk, that might be used for walking or for jogging is less available as income decreases and is associated with higher BMIs.

The influences that I think have a major impact on childhood obesity are shown in this model. Parents are indicated separately with these icons. This icon represents schools and teachers. This represents the religious and ethical cultural environment.

This is a symbol for community, and here I mean sidewalks, parks, recreational facilities, and neighborhood safety. This is the influence of peers on children. This is the influence of the media, as indicated by a television.

Now, obesity is often referred to as a condition resulting from overnutrition. I think it is useful to think of obesity in terms of "undernurturance," because this concept speaks to the issue of parenting.

An article that appeared recently in *The New Yorker* asked, "Do parents matter?" In other words, undernurturance, a failure to provide adequate care and attention to the training, education, and rearing of children, can and does lead to obesity in children. And, of course, the primary responsibility for nurturing a child falls to parents.

The title of the study is "Parental Neglect During Childhood and Increased Risk of Obesity in Young Adulthood." There is a connection between poor parenting and the development of obesity in children. That is why parenting skills are considered to be an important factor in the etiology of childhood obesity and are a key to successful treatment.

Parental neglect was found to be a strong predictor, in fact, the strongest predictor in this particular study that was published in the *Lancet* in 1994.

This study was published in 1998 in the *American Journal of Clinical Nutrition*. It shows that treating the parents of obese children was actually more effective than treating obese children directly.

In other words, the weight loss was greater in the group of kids whose parents were treated than it was in the group of kids who were treated directly. Before you conclude that I believe that childhood obesity is a parental disease, I would urge you to read this book. It is "The War Against Parents" by Hewlitt and West.

It analyzes the forces that militate against parents being more available and more effective in nurturing their children. On the contrary, I believe that parents are failing because they, too, are struggling with a hostile environment that depletes them and leaves them with too little time to spend with their kids. I do not believe that we can stem the epidemic of childhood obesity without helping parents, who all too often were not well-nurtured themselves, and indeed are often children themselves.

Too often it is assumed that an obese child in America is a well-nourished child, too well-nourished many people would say. This is not necessarily the case, especially if foods and beverages delivering empty calories are displacing more nutrient-dense alternatives on a consistent basis. To illustrate that possibility, here is a piece of information from a report called "Liquid Candy" on teenage soft drink consumption that was recently put out by CSPI.

They used USDA food consumption data to show that over the past 20 years there has been a significant drop in milk consumption shown in white, and a dramatic increase in soft drink consumption shown in green, among both girls and boys ages 12 to 19. I am only showing you the data for boys.

It is this displacement phenomenon that can lead to the twin problems of obesity and inadequate nutrition. Other speakers have referred to growing portion sizes. Portion sizes have grown over the past 20 years and have reached absurdly large proportions.

For example, 7-11's Big Gulp is 64 ounces, which positively dwarfs the largest serving shown on this size, which is only 20 ounces. The Big Gulp is capable of delivering between 600 and 800 calories. If a teenage girl drinks one of these Big Gulps, along with two slices of cheese

pizza, she is consuming a minimum of 1200 calories. This represents two-thirds of her average daily energy requirements in one meal.

Does this scenario translate into obesity? Dr. Richard Troiano and his colleagues at NIH have recently reported a link between soft drink consumption and overweight in teenagers. And, certainly, it is dogma within the obesity treatment community that obese people need careful education in portion control, in both beverages, as well as foods.

There is also the issue of meal skipping--this has been alluded to by others--and its relationship to obesity. Based on analysis of NHANES III data conducted by Dr. Ed Frongillo and myself, it shows the relationship between BMI percentile and regular breakfast eating as reported in the NHANES III survey.

About half of all boys shown in red, regardless of their BMI, ate breakfast regularly. But note that the majority, 60 percent, of the thinner girls shown in green are eating breakfast regularly. As the BMI percentile increases, breakfast eating declines. The majority, nearly 80 percent of the heavier girls, are failing to eat breakfast regularly.

However, the indication is that it is arrived at through excess consumption, inactive lifestyles, or a combination of the two, overweight in teens is associated with increased reports of depression. This sad fact must be kept in mind as we sort out our strategies and our policies. Overweight young people are suffering and greatly in need of our help.

To summarize, at least up to this point, the culture is hurtful, the environment is hostile, and the family is under siege. Children and teens are increasingly inactive and overweight. A sizeable proportion of overweight teens is depressed.

The media's obsessive depiction of only the ultra slim ideal body type does not help keep teens slim, it simply tyrannizes them. Furthermore, their nutritional status may well be suboptimal despite the obesity. So what are we going to do about it?

I agree with other speakers today who have suggested that parenting is where we should start. I would start with USDA's program for feeding women, infant, and children--the WIC Program. I think that the WIC Program offers a high likelihood of reaching women at a time when they are open to education.

Certainly, there are other USDA feeding programs that might also offer avenues of education that would impact childhood obesity. I would encourage strengthening messages about physical activity in each of these programs. I am gratified to hear that Secretary Glickman is interested in doing exactly that.

I believe that the WIC Program offers a unique opportunity to educate mothers during that all important "teachable moment" when they have learned that they are pregnant.

I have identified that schools and teachers are highly influential in shaping the attitudes and knowledge of children. They are in a prime position to impact childhood obesity. So, another USDA program that offers opportunities is the Team Nutrition Program. In my opinion, the Team Nutrition Program needs some redesign. I think it needs to have a much stronger commitment to obesity prevention through strengthening its focus on physical activity and the role of physical education.

With regard to the religious and ethical cultural influences on children, I want to tell you the story of a fellow graduate student when I was in graduate school 20 years ago. She was an outstanding student who was devoted to obesity research. She completed her Ph.D. at Columbia and went on to do a post-doc in obesity at the University of Vermont.

After that she stunned all of her friends and colleagues by going to Divinity School. She had become so impressed by the spiritual needs of the obese people she worked with, that she felt she could offer more by focusing on this area directly.

For us I believe the practical lesson in this is that support groups that speak to issues that go beyond food and physical activity are important, and they can make a vital contribution to obesity treatment and obesity prevention.

This unusual symbol is the symbol of community. It is difficult to convey all of the aspects of a community that can contribute to obesity prevention in one small symbol. These include sidewalks, as I have said, and bikeways, parks, school gyms, and other recreational facilities. It also includes neighborhood safety.

We live in a country where many parents drive their children to school each day because they fear for their children's safety. I believe that a marker for the health of a community is whether or not most children are able to walk safely to school.

The Department of Transportation and a number of nonprofit organizations, as well as a few for-profit organizations, have formed the "Partnership For a Walkable America." The Partnership has developed a tool to help parents and children evaluate their community and to point out ways to improve the safety and the walkability of their neighborhood.

From a policy standpoint, I believe we have to look very carefully at the way our tax dollars have been spent historically on facilitating and promoting automotive transportation, too often at the expense of pedestrian and bicycle modes of transport.

Why should our tax dollars be spent to build bridges and roads that do not permit and are not safe for alternative modes of transport? To be sure, we need the Department of Transportation involved in the Partnership For a Walkable America and in any serious initiative to tackle childhood obesity.

Neighborhood safety is a key component of this initiative. We need the Department of Justice to be involved as well. The Department of Justice has many innovative programs designed to reduce crime and to help youths learn how to resolve their conflicts without violence.

All of these efforts contribute to making our neighborhoods safer for physical activity, and, thus, have a role to play in combatting obesity. My favorites are those that provide recreational programs as a way of deterring crime.

This symbol represents the powerful influence of peers on the behavior and attitudes of children. Dr. Eileen Kennedy at USDA sees enormous potential for using the wide-reaching Extension network as one part of an expressive program that targets childhood obesity.

Extension staff are in place in 3,200 counties throughout the United States and already have active programs that reach kids. The USDA programs, EFNEP and 4-H, are in an excellent position to reinforce messages on healthful eating and increased physical activity.

I would be remiss if I failed to point out that the NIH has several initiatives currently under way to address obesity. And, of course, I want to see more research done. But I want to emphasize that the NIH and the academic institutions across this Nation favor molecular research.

Notice that our unhappy life scientist has his hat out waiting for spare change. Whereas, the molecular scientist pulls up in a limousine and he is wheeling out his model of a molecule. We need to strike a better balance between human behavioral research and molecular research if we are going to be serious about preventing obesity.

There are so many areas in which the major influences on children interact with each other. These interactions may negatively or positively impact childhood obesity. For example, how do the interactions between parents impact the children? What is the impact of having one parent missing?

The answers to these questions, the unanswered questions are legion, but they are not questions at the molecular level.

The final point I want to make is related to the value of the NHANES survey, the National Health and Nutrition Examination Survey, which is the responsibility of the National Center for Health Statistics of the CDC. I believe it is vitally important to sharpen the ability of NHANES to tell us more about the childhood obesity epidemic and about how the major influences on children can work toward obesity prevention.

I believe there might be practical benefits, and here I mean both political and funding benefits, if NHANES were to be redesigned to provide information on childhood obesity prevalence in every single State. Without State-by-State information, many legislators will erroneously conclude that what they cannot see is not happening in their own background.

Because of the pivotal role of the USDA, it is fitting that Under Secretary Watkins has called us together today to discuss the growing problem of childhood obesity. It is very exciting to hear of the commitment of Secretary Glickman to this issue.

The USDA is in an optimal position to coordinate key programs and forge alliances among interested organizations and other Federal agencies. Each has their constituencies to which they are accountable, but none wants to see children suffer from obesity.

I believe we all want to work together. I will say that my first choice for leadership in communications to the public in this effort to combat childhood obesity is the Surgeon General of the United States. I am not alone in this. Members of many organizations in both the not-for-profit, as well as the for-profit community, have expressed the fervent hope that Dr. Satcher will take up this challenge. I take his appearance here today as a positive sign that he will at least consider it. Thank you very much for your attention.

DR. ANAND: We have two more speakers, then we will have the question/answer period, and, finally, Under Secretary Watkins will wrap up the program.

But before we move on, first of all, I want to thank Cary Golden who has given us a lot of help; Barbara Barkley of USDA; and, more importantly, my own staff, who have been working very hard.

I have really put them through lot of work, but, particularly, John Webster, Nancy Gaston, and Bruce Klein. Now, we would like to have, since we are running short of time, an 11-minute break.

(Whereupon, conference was recessed for a short break.)

Presentation by
B. Don Franks, Senior Program Advisor
and
Christine Spain, Director
Research, Planning, and Special Projects
President's Council on Physical Fitness and Sports (PCPFS)

Moving Children Into the Next Century: The Federal Perspective

B. Don Franks, Senior Program Advisor, President's Council on Physical Fitness and Sports (PCPFS)--Secretary Glickman, Under Secretary Watkins, Dr. Anand, distinguished colleagues, ladies and gentlemen, brothers and sisters. Twenty years ago, if someone had been invited to speak about physical activity at a conference such as this, it would have been as an afterthought. The other speakers would have emphasized almost everything but exercise.

It does my heart good to hear the Secretary, Under Secretary, Surgeon General, nutritionists, physicians, pediatricians, and psychologists all talking about the importance of physical activity. That is the good news. The bad news is that they have said everything I was going to say. I did notice that Under Secretary Watkins talked about experts, but no one provided any definition of the word. So, that is one contribution I can make. An expert is anyone away from home with slides or a laptop. An expert is one that used to "spert." If you look at the derivation of the word, ex means former and "spert" means drip under pressure, so it is a former drip under pressure. My favorite definition is: an expert is one that knows more and more about less and less until he or she knows everything about nothing.

Chris Spain, PCPFS Director of Research, Planning, and Special Projects, regrets that she cannot be here for this session due to an engagement scheduled prior to this conference. I am

going to quickly review the rationale for physical activity for healthy and fit children, then present recommendations for policies and programs.

- Physical Activity and Children

  Physical activity is important for children for the following reasons:
  - Children's health
  - Basis for active lifestyle
  - Reduction of risks for health problems throughout life

- Physical Activity and Obesity

  In terms of the theme of this conference, physical activity is essential for obtaining and maintaining a healthy level of fat, due to:
  - Caloric expenditure
  - Minimizing accumulation of fat cells in children and youth
  - Reduction of weight through diet and physical activity is primarily fat loss
  - Being essential for healthy weight maintenance

- Recommendations

  Pate, Corbin, and Pangrazi summarized recommended Physical Activity for Young People in the Fall 1998 issue of the PCPFS Research Digest (copies can be obtained by writing to the PCPFS). Many of the following recommendations are derived from that source.

- Physical Activity Guidelines: Children

  The first area deals with guidelines for children's activity. One of the mistakes we have made in terms of policy is that we treat children like young adults. We have not had as much research on children, so we take what seems to work with adults and try to apply it directly to children. The National Association for Sport and Physical Education (NASPE), American Alliance for Health, Physical Education, Recreation, and Dance published guidelines that treat children as children (NASPE, Physical Activity for Children: A Statement of Guidelines, 1998). These guidelines are not just warmed over adult guidelines. Children should:
  - Accumulate more than 1 hour of daily age-appropriate activity
  - Engage in intermittent vigorous activity > 10-15 min
  - Not have extended periods of inactivity
  - Participate in a variety of activities

One of the reasons for recommending an hour of daily activity is that it allows for some reduction in activity time with age and still provides the recommended 30 minutes for adults. Appropriate activities need to be included based on the growth and development of each child. Intermittent vigorous activities fit the normal spurts of more and less vigorous activity that are observed when children choose activity patterns. Reducing extended periods of inactivity (e.g., TV, computer games) is an important strategy for developing active lifestyles. Learning and experiencing a variety of activities helps children build up a repertoire of activities from which to choose as the context of their lives change. These recommendations provide a rationale for good

elementary physical education programs, in which qualified teachers choose appropriate activities, and help children enjoy and experience success in numerous activities that can be used for life-time health and fitness. We have, for example, done a disservice to females in our society because we have often limited them to a small range of activities.

- Physical Activity Guidelines: Adolescents

  The recommended activities for adolescents are similar to those for adults:

  - Daily moderate activity, accumulating a minimum of 30 minutes
  - > 3 days/wk vigorous activities - at least 20 min
  - Guidelines for Promotion of Physical Activity

The Center for Disease Control and Prevention (CDC) has issued helpful guidelines for physical activity promotion (CDC, Guidelines for school and community programs to promote lifelong physical activity among young people, *Morbidity and Mortality Weekly Report,* 46, RR-6, 1-36, 1997). The policy is to provide an environment conducive to and supportive of physical activity for all individuals. This would include attractive stairs, bike/walking trails, accessible programs that are safe and have qualified supervision. For example, one of the conference centers at NIH has very attractive stairs. In fact, you have to search to find an elevator. However, in most public areas, it is the opposite: stairs are difficult to find and are often unappealing. Think of the healthier smoke-free environment that is in place 30 years after the Surgeon General's report on smoking. We need that same kind of environment enhancing accessible and safe physical activity.

These recommendations require cooperation and collaboration from many sectors (e.g., business, schools, hospitals, government). The American Heart Association, American College of Sports Medicine, and American Alliance for Health, Physical Education, Recreation, and Dance are to be commended for taking the lead in establishing the National Coalition for Promoting Physical Activity. This coalition, now including many organizations, is working on a number of issues at State levels, national policy issues, and many other areas to promote physical activity. A very positive trend is for nutrition and physical activity professionals to work together for common messages. Examples include the Dietary Guidelines Alliance, USDA Team Nutrition, Bright Futures from the American Academy of Pediatricians, and now WIC.

I am impressed with the coordinated school health program from the Division of Adolescent School Health (CDC). If this program were widely supported, it would do more than almost anything to enhance adequate health, nutrition, and physical activity for all children.

We have allowed others to define basic education as calculation and communication. These are important, but it is absurd to define quality of life excluding health, activity, nutrition, music, art, and dance! As a policy issue, we must have a more inclusive definition of essential education components. Until we do so, then we will continue to have reductions in health and physical education as school boards face budget decisions. Many options will be supported, including having advanced math and physics so that students will be halfway through college by the time they graduate from high school. As long as we allow others to describe us as nonessential, then health and physical education will continue to be reduced. It is a paradox that

at a time when the importance of physical activity is widely recognized in medical, scientific, and public health circles, we see a significant reduction in physical education in the past decade, as reported in a recent progress review of the Healthy People 2000 goals.

There need to be insurance incentives for individuals and institutions who promote healthy lifestyles. Insurance companies are behind the data in this area. There is compelling evidence that active individuals have lower health care costs, thus insurance should be supporting preventive programs allowing individuals of all income levels to participate. We have done much better with middle and upper class professionals who can take off a couple of hours in the day and can afford health club memberships. However, we have not made activities available to everyone, regardless of income level.

Federal and other agencies need to support technical assistance and demonstration projects to evaluate what works in specific situations with particular populations.

The importance of adult role models has been emphasized in this conference. In addition, we need to work with children and youth so that activity is an "in thing" to do.

Qualified personnel is an important component for physical activity promotion. Although school recess and free time to play and work-out are important, they cannot replace physical education taught by qualified teachers and fitness programs with qualified fitness instructors. What happens in recess is that the obese children are not treated kindly--you can imagine that if a child is the last one to be chosen, and the other children groan and say, "Oh no, not Don again," that after several weeks, the child might decide to hold the coats rather than play. Recess cannot substitute for physical education where all children are encouraged to be active in a positive atmosphere. We need qualified teachers--the classroom teacher has more than enough to do to adequately cover the other areas of the curriculum.

We also need qualified volunteer coaches in the community, so that the kids are having fun and enjoy the activities, not being coached as if they were the Washington Redskins (perhaps not a good example this year). In addition, we need to have qualified fitness instructors, not only at the health clubs but also in the after-school and community recreation programs.

Motivation to begin and continue regular physical activity is increasingly recognized as an integral component of policy and programs. The President's Council on Physical Fitness and Sports (PCPFS) has tried to assist with motivation in a variety of ways. The PCPFS mandate is to serve as a catalyst for physical activity and fitness. The President's Challenge Physical Fitness Awards Program challenges children and youth to reach their highest fitness level through the adoption and maintenance of a physically active and fit lifestyle in schools and other settings. In the 1970's, the PCPFS was ahead of its time when it introduced the Presidential Sports Award promoting physical activity behavior which is a powerful motivational tool. Anyone, 6 years old and older, can pick one of 69 activities, do it on a regular basis for several weeks, and receive an award based on keeping a log of the activity participation. The PCPFS also works with the media in promoting physical activity. Hopefully, many of you have seen the "Get Off It," "Get Up! Get Out," and "Girl Power" ads.

Thus, our recommendations are to support those initiatives that are in place and working and to supplement these efforts with new programs that fill in the gaps and overcome barriers to activity. As several speakers have mentioned, it will take cooperation and resources. Let's not rely on the usual reply from the politicians, school board members, and others that we cannot solve a problem by throwing money at it. My response is, let's try it for a change.

Introduction of Dr. Laura Sims

DR. ANAND: Before I bring our last speaker, I want to thank each one of you. It is really especially gratifying that you have all come here and stayed all day. I think it is a great encouragement to us and it shows a great support for us. I want each one of you to please give yourself a round of applause.

Our next speaker has actually had no notice about speaking. It is really very nice of her that she agreed to speak. Only yesterday we requested that she speak today.

Dr. Laura Sims is Professor of Human Nutrition at the University of Maryland. During the current academic year, she is on sabbatical leave as visiting scholar at Tufts University Center on Hunger, Poverty, and Nutrition Policy. That sabbatical, in conjunction with her past tenure as Administrator of USDA's former Human Nutrition Information Service, substantiates an expertise on domestic nutrition policy.

She holds a Ph.D. in nutrition from Michigan State University, an M.P.H. in nutrition from University of Michigan, and a B.S. in nutrition and family studies from the Pennsylvania State University.

Dr. Sims' research interests focus on the study of domestic nutrition policy, effectiveness of nutrition/public nutrition information strategy and delivery systems, psychosocial influences of food consumption, behavior, and issues dealing with community nutrition program delivery and innovation.

We are very thankful to Dr. Sims for agreeing at the last minute to come and speak to us. Dr. Sims.

Presentation by Laura Sims, Ph.D., M.P.H., R.D.
University of Maryland

The Role of USDA's Food Assistance Programs in the Fight Against Childhood Obesity

Laura Sims, Ph.D., M.P.H., R.D., University of Maryland--Thank you, I think, for the opportunity to be with you. I must admit though that I feel quite intimidated to be standing here before you in place of Lynn Parker who has this wealth of wonderful experiences gained through her work at FRAC, an outstanding food advocacy organization.

Lynn and I were able to discuss what she would have said to you today. And so, with her help, I am going to share the views that we both hold about food assistance programs and the prevention of childhood obesity in this country.

I stand here as a strong proponent of USDA's food assistance programs. With the firm realization that while improvements in delivery systems may be needed, these programs are providing a much needed service to those who are hungry and food insecure in this country.

As we heard earlier, poor adolescents, especially those with Caucasian ethnicity, are three times as likely to become obese, as adolescents who come from wealthier families. As Lynn reminded me in our conversation yesterday, we forget that we are lucky that kids are not as malnourished as they used to be. Now, of course, obesity is a form of malnutrition, of overnutrition, as Dr. Moore pointed out, but we are not seeing the devastating forms of undernutrition and deficiency diseases that once prevailed in this country. As you recall, the National School Lunch Program was actually established for that very reason--to correct what was being seen as young men failed their physical exams for induction into service during World War II because of poor health caused by inadequate food intake.

So, let me quickly review the various child nutrition and food assistance programs and what we know about their effectiveness on recipients. First, let us examine the Food Stamp Program. The Food Stamp Program is the bedrock of all food assistance programs. In July 1998, 19 million people participated, down from nearly 23 million in 1997. I think an important statistic is that, as Under Secretary Watkins pointed out, over 60 percent of all food stamp benefits go to families with children.

Another point is that some of our animal studies do suggest that there may be a link between chronic food deprivation and obesity caused by our body's need to be efficient storers of calories. If we take that and apply that to food insecure families, we realize that running out of food is certainly not conducive to proper weight management.

As Dr. Anand told you, I am currently on sabbatical leave at Tufts University. A study that was performed there several years ago using USDA's CSFII data confirmed the protective impact of food stamps for poor children. Poor children receiving food stamps were 11.4 percent deficient in food energy, compared to 16.7 percent of poor children not receiving food stamps, a difference of about 5 percent.

Although the nutrition education component of the Food Stamp program is not all that I would like to see it be, there is encouraging news of new partnerships being forged between the Extension system and the Food Stamp Program in several States.

The second program I would like to refer to is the National School Lunch Program, which we have heard a lot about. It is the largest and oldest of all of the child nutrition programs permanently authorized first in 1946. Today, almost all public schools participate in the program, and the average daily participation is over 26 million children.

Children from households with incomes at or below 130 percent of poverty receive free meals, while those between 130 and 185 percent of poverty receive reduced-price meals. A recent figure showed that 13 million children receive free meals and an additional 2 million received reduced-price lunches, thus over half of all school lunch recipients are poor children.

The School Lunch Program increasingly offers more healthful foods, with efforts to reduce the fat and sugar content of school meals a top priority of this Administration. In addition to the quality of food, however, the meals also model appropriate portion size.

They offer a combination of foods of appropriate nutritional and caloric value. They demonstrate how meals should look, in terms of being made up of different kinds of foods. They offer children an opportunity to eat while interacting socially with one's peers, characteristics all of effective obesity prevention activities.

The next program I want to mention is School Breakfast, which is indeed a formidable ally in our fight against childhood obesity. Studies have shown that children and adolescents, in

particular, who skip breakfast have more problems with weight control than those who consume this early meal.

The program probably helps to curve caloric excesses, because students are just not so ravenous at lunch time. In addition to being a deterrent for overeating, it has also been shown that children who eat breakfast simply perform better in school.

Currently, 17 million children in 70,000 schools participate in the School Breakfast Program. That is not as many as most of us would like to see. Of these, 85 percent are those receiving free or reduced-price meals. Efforts of anti-hunger groups have targeted "severe need" school districts; that is, those defined as providing at least 40 percent free meals, for enhanced school breakfast participation.

Evaluation of a universally-free school breakfast program demonstration project in Central Falls, Rhode Island, revealed that there was significantly higher participation in the program among poor children and the youngest children, those kindergarten through second grade, thus, providing maximum benefit to those of greatest need. School breakfast programs were also providing foods that were lower in fat and sugar content than breakfasts eaten at home.

The fourth program I want to mention is CACFP, the Child and Adult Care Food Program, which offers nutritious snacks to children and adults in day care and after-school settings. Currently about 2-1/2 million children participate.

Again, these programs are offering not only nutritious foods, but are providing an opportunity to model appropriate between-meal food consumption. With recent legislation, children through the age of 18 who participate in after-school activities, such as those at the boys and girls clubs, the YMCAs, the YWCAs, and other youth activities, will be receiving the snacks.

I think this an ideal program in which to incorporate nutrition education into the activities that are offered. Because these programs work directly with the children, and often with their parents, they offer a unique opportunity to children to develop a healthy relationship with food.

I refer us all to thinking back to Dr. Birch's presentation about children learning to like the foods that are "good for them." I urge those in charge of CACFP to not just offer sugar snacks or foods that are thought to be popular with children, but to truly experiment and offer a variety of healthful foods for children to experience.

Dr. O'Hare's comments certainly covered what I wanted to say about WIC, the Special Supplemental Nutrition Program for Women, Infants, and Children. The WIC Program, with its emphasis on breast-feeding and offering of appropriate supplemental foods to young children, is also important as an obesity prevention opportunity. It is also at this time that young mothers are most approachable and motivated to learn about nutrition and those feeding practices that will promote long-term health.

So, what is needed? What do we need to do to make these programs work? As a means for obesity prevention, we would be deluding ourselves if we did not recognize the role of outside influences. It is not just the food programs of USDA. We need to recognize those environmental factors which make it difficult for many children, particularly adolescents, to make appropriate food choices.

Certainly, in-school feeding programs are a good example of this. Often children are so rushed at meal time, or succumb to peer pressure, that high-fat, fast-food alternatives are a safer, and more socially attractive choice.

In many schools, and I know this is true for those that my children attend, there is no space to have children have an in-school feeding program for all children to particpate. So, during open lunch, they leave the school grounds to seek out other meal alternatives.

We must do more about the environmental context in which these programs are offered, so their contributions are not lost. It takes not only an ideal, knowledgeable, involved parent (and those are getting to be rare these days), but also enthusiastic teachers who are willing to work with the food service program. I would echo Connie Evers' comments that many of us were devastated the NET funding was zeroed out this year, because that was one of our few programs that really was forging the linkage between the classroom and the lunch room.

We also need to include school administrators in discussions involving school feeding programs. Often they are the ones that do not even see this connection between the lunch room and the classroom. In these economically tough times, they often regard the revenues from ala carte items or vending machine offerings as a source of unfettered cash.

Another feature which must be encouraged, and which we have heard a lot about today is physical activity. Obviously, USDA is not in the position of providing physical activity as it is with food. But, certainly, opportunities for enhanced physical activity can be a part of after school programs that receive CACFP funding or could even be part of the preschool day breakfast program.

We are acutely aware of the safety concerns that cause some parents to forbid their children to play outside or even walk to school. Indeed, environmental constraints such as fear for one's safety may be more to blame for the current epidemic of childhood obesity than food intake directly.

It certainly has led to an epidemic of T.V. devouring couch potatoes among even the youngest of our children. What we seek in an effective deterrent to obesity in children is an interlocking program of food service delivery, accompanied by nutrition education and physical activity, very comparable to what Dr. Robinson described in the Stanford Program.

We see food assistance programs as building blocks for health as well as for education. We believe that it is imperative that we adopt a holistic perspective in which to provide such programs that offer the most promise for long-term success. Thank you.

POLICY IMPLICATION PANEL
QUESTION-AND-ANSWER SESSION

DR. ANAND: I will ask the panel to come here. Now it is your turn to make comments or ask questions. So, if you will come to the mike and identify yourself. And, now, for the next 2 minutes Under Secretary Shirley Watkins will wrap up the program.

Questionner (from North Carolina): Good evening. My first question or comment is to Dr. O'Hare. I would like to hear more about your thoughts on nutrition education for the Summer Food Service Program, as well as the CACFP.

My next question is for whoever has the answer to this question, "Has there been any thought given to looking at the allowable foods on the CACFP in trying to decrease the allowable foods that are high in calories and low in nutrients?"

DR. O'HARE: We have not included any nutrition education as we have in some of our other programs. I think there are unique ways to do it, whether it is by a napkin, or whether it is by how something is wrapped, or anything else. But I certainly think we can do some of these things that we have not done before. That is a suggestion I would like to make, because I think it is necessary for a message to be given with the food.

QUESTIONNER: Thank you.

DR. ANAND: Yes, this side please.

QUESTIONNER: I guess I wanted to comment about the quality of the foods offered in the CACFP program. I think this is probably also true for breakfast programs. One of the observations I have had is that they are probably a great source of calories.

It is usually a sweet roll and some juice, or a grain product and some milk, or something like this. I guess what I would like to encourage food service operators to think about is how can they get away from foods--you know it is very tough.

I think one of the toughest jobs in the world is being a food service director. You have a limited budget. You want to feed kids things they will eat, so you do not have so much waste. And, yet, you are trying to encourage them to adopt other kinds of foods.

I think Ms. Evers' comments about how to get them to do that is important. I think in the breakfast program and in CACFP they have an opportunity to not just roll out the prepackaged sweet bun, or whatever it is, and let's think about maybe making some pumpkin bread, or something like that. I know that sounds totally unrealistic, but I think that there are some opportunities there that we should not overlook.

DR. O'HARE: Something that I did not have time to mention is that I am not sure we do not need to work with marketers and other food producers to do more glitzy packaging. Good foods are not very sexily prepared, or produced in order for these children to look at.

And, certainly, it is easy to pick up a bag of potato chips, because they are portable, they are small, they are the right size, and these are the types of things parents tend to pick off shelves.

DR. ANAND: Please, go ahead.

QUESTIONNER: I am a psychologist at the Johns Hopkins Weight Management Center. My question is for Barbara Moore or whoever else wants to answer it. I really liked your talk and I agreed with a lot of what you said.

I am just wondering about whether it is going to be effective enough to use the carrot rather than the stick. And, particularly, with the example of fast-food restaurants, it would seem to be a real problem both in the cheapness of the food and the accessibility. And that if we do not limit those in some policy or environmental way, it seems like fast-food, at least in the population that I treat, is really a problem.

I know that my patients are feeding their children the fast-food and they are on every corner. It is very cheap to do so. I was just thinking if we could have our environment be more like what Connie Evers had suggested for the school environment, where you have more prominent healthy foods and limit the exposure over the availability of less healthy foods. That would be better.

DR. MOORE: That is a tough question. I just read a very interesting article about fast-food--it was called Fast Food Nation. It was published in *Rolling Stone* magazine. It was a really detailed description of the history of the fast-food industry in America.

One of the points that the author made is that the fast-food industry employs scores, just literally thousands and thousands of teenagers. Soon after I had read the article, I had an occasion to speak to one of the high level executives at Bob Evans restaurants.

They are not a national chain, but they are sort of a semi-national chain. We were talking about the growing epidemic of childhood obesity and about all of the kids that work for Bob Evans, and work for McDonald's, and work for Wendy's. These people do not want to see kids getting fat and kids getting sick.

I think that if you want to enlist their support, you have to figure out how to approach these people, and you have to figure out a way to design a carrot for them, so that they get something out of it. I think you will get their cooperation a lot quicker if you use the carrot than if you try to put a tax on fast-food.

DR. ANAND: Yes, go ahead please.

QUESTIONNER: Hi, I am a nutritionist and an R.D. Actually, Dr. O'Hare, I really want to thank you for bringing up Channel One. I had an interesting experience during the first part of the session. I whispered to my colleague, "Gee, I wonder if Channel One is still around."

I do not work in the public school system. I work with day care and Head Start predominantly and I am sorry to hear they are. For those of you who are not familiar with it, they, at the time that I became familiar with them, used to have Skittles advertised, which is a candy, during school hours.

Now, while some people--and I do understand the issue around good and bad food. The fact of the matter is I think one of the problems, and I am not sure I am phrasing it as a question, or it is just a point of thought. We are sending very confusing messages to our children. That is the part that I am having a hard time with.

At the top of the pyramid, it is high fat/high sugar foods. And, yet, we have high fat/high sugar foods at the base of the pyramid in our dairy area. So what are we telling our children? In a soap note, we need to prioritize.

What is our priority? Calcium is important, but what has the more deleterious effect, obesity? It is a thought. Body image--are we talking about obesity or are we talking about healthy lifestyle? I think this was brought up also in discussion.

I think it is a real--by Connie--and I think it is an important point. Again, we have children who are anorexic. Okay? I deal with after school programs as well. I have little girls 9 years old

telling me that they are too big. Let me tell you, they are as thin as I am or thinner. This is in East Harlem.

The models that I would like to just touch base on--community-based models. In Head Start we have parent councils. I think that would be a wonderful place to start. For those researchers who are present, I encourage you to start designing studies working with that population, the leaders in the community.

It is a trickle down effect and we need that help desperately. I have parents who come to me and ask me why don't you put syrup on the pancakes? Why is it applesauce? Why is it peaches? They do not understand. I am glad they bring it up. I am glad we have a parents council.

Yes, the PTA is very important and we need to use that tool to educate our parents, because our parents do not do it in the home. So we cannot--they are not taking it back.

DR. ANAND: Okay. Would you like to respond?

QUESTIONNER: Please, if they can. I do not know that they can.

DR. ANAND: Go ahead, respond to it.

DR. O'HARE: Well, you have had a myriad of things that you have brought up, and some of them of course we have already endorsed here on the panel. I do think there is a very important issue we ought to think about, and that is that sometimes our nutritional messages to the public are not consistent.

One example we have talked about is not only milk but also butter and margarine. We have changed our minds over time. I think the public is very confused by us.

That is some of the feedback that I get back from some of the parents that I deal with. They are confused, that our messages are not consistent, and that we are not clear. That is why I think there is a special formula that I like to use for obesity prevention.

That is that at the top of the equation for good nutrition is that it equals research and education implementation, but the denominator is good collaboration, communication, and consistency to everybody, not only to professionals, but also lay public.

DR. ANAND: Can we go to the other side please?

QUESTIONNER: Yes, I am from the Medical College of Georgia. I will switch the talk over to exercise. We have been working with obese teenagers and children, and we can say that when they do come in, and they do exercise, they do get reductions in body fat, including visceral fat.

So the next question, how can we get them to do that? Well, we use an_____ we do it after school. That way we do not have to fight with the bureaucracy, have teachers change their behavior, and so on. So, that is my comment.

Now the question would be, therefore--and, oh, let me--another comment is that we have heard a lot about the idea of encouraging development of programs that presently exist. There are many nutrition programs that presently exist. So, we have a lot of good opportunities there.

But after-school physical activity programs exist for sports teams, and they do not exist for the upper 50 percent of the body mass index population that is likely to continue on to obesity later on. And so, the question I have, and it is a very big one, "Is there some way that anybody thinking at a policy level might imagine starting--I suspect it would have to be started for poor kids anyway--after-school programs?"

DR. ANAND: Comments.

DR. O'HARE: I will be happy not to approach it completely, but at least tell you something that is going on in New York. Another Dr. Barlow--not our Dr. Barlow here today--has started a program and received funding under a violence prevention program in some poor areas of New York City that have been shown to be very effective in providing physical activity programs after school hours.

Some of those have been replicated across the country. That is what I said. We need to collaborate with other agencies and other funding sources in order to bring this whole package together. Because I think you are absolutely right. We do have funding for sports that are accepted as athletic--part of the athletic department, but certainly not for those children who are not sports-minded.

DR. MOORE: For 4 years I ran the weight reduction program for Weight Watchers International. One of the things I learned in the course of acquiring that experience is that a lot of overweight people do not like the forms of activity that we advocate.

They like dancing, for example. A lot of them like dancing. They are only really willing to do dancing, and they are not willing to either walk or jog. So, I think that we have to be more open-minded about the kind of physical activities that we encourage, and we have to really get our thinking out of the box on that score.

DR. ANAND: Okay. The last three questions, or brief comments. Go ahead, please.

QUESTIONNER (from New Orleans): Yes, I think that this meeting has been very well done, and I think it has brought up a lot of new ideas. I think one thing that we did not hear though was the type of collaboration and cooperation that can occur between the pediatricians, the exercise physiologists, the nutritionists, and psychologists.

I think that there are models out there, whereby, this team approach--I do not think the pediatrician is well-equipped to do it; he does not have time. I do not think the nutritionist alone can do it. I do not think the exercise physiologist can do it, nor the psychologist.

I think when those four entities come together in models that are presently out there, that we can effectively deal with the problem of the 20 to 30 percent who are already obese. We are talking about prevention here of extending it beyond what it is. But what about all of those children who are obese now, who actually need to lose 20, 30, 80, 120 pounds?

DR. O'HARE: Thank you for giving part of the paper that I did not have time to give, because what was added here, is we need more centers of excellence that take a multidisciplinary approach to the problem.

QUESTIONNER: Well, it is not only the centers of excellence.

DR. O'HARE: Right.

QUESTIONNER: Because I think that there are models out there of programs that can be duplicated in other communities around the country, and that basically if the pediatricians, with the help of the Academy, were to say, okay, this is a model just like the physician and the nurse, this could be the physician, the exercise physiologist, the psychologist, and the nutritionist working together with model programs that can be duplicated elsewhere to deal with the problem that the pediatrician cannot do alone. So, I think that is something that could come from this meeting that would be effective in terms of dealing with the problem, because we have not dealt with the problem.

We are talking about prevention, which is very important, but that is preventing those who are obese from getting more obese, and preventing those who are not obese from getting obese.

DR. O'HARE: I would certainly support a model, or the use of a model like that. But, let's face it, that is an expensive model. And I think that it has to be borne in mind that a lot of these people can scarcely afford to put food on the table, and yet, their kids are obese. I think that there needs to be support and development of these centers.

DR. ANAND: We are going to have the last two comments here.

QUESTIONNER: Know one thing about the expense of the model, the model is a very inexpensive model compared to a physician providing that care. It is a part-time model and there are many nutritionists, exercise physiologists, and psychologists out there who would be interested I think in coming together to provide that care for a community in terms of all of the pediatricians that are dealing with the problem unsuccessfully alone.

DR. O'HARE: That would be welcome.

DR. ANAND: Yes, last two comments. Go ahead, please.

DR. O'HARE: It builds on the need of family practice physicians and pediatricians, since providing nutrition in the primary care arena is part of the 2010 Objective under nutrition. By the way, if anybody has not read that document, they need to.

QUESTIONNER: But I think probably many of us who work with people, educate people, have had the physicians say something that completely eradicates what we say. I was wondering if Dr. O'Hare could touch on nutrition education in medical schools, partnering in the primary care.

DR. O'HARE: I have to tell you I think we have a lot of things that are not done. This is not what I was asked to address, and, therefore, I did not address it. I did not even address the fact as I did a random dirty sample about 2 weeks ago of some physicians and many do not do BMIs--and I am not talking about just pediatricians.

QUESTIONNER: Right.

DR. O'HARE: The truth is we need to do a better job than what we have been doing. We all know that, not only in nutrition education, but even measuring obesity in children. I do believe that it is an agenda item in the Academy of Pediatrics and Family Practice.

That is why we have our AAP policy statements. That is why we have consensus groups that meet and develop some guidelines for us. What we need to do is for people to take these more seriously.

QUESTIONNER: Right.

DR. O'HARE: But I also feel you have to be realistic, which I did mention. A 3-year-old child under a managed care is given 15 minutes usually and three visits for that year, or else is that above the norm. This is the reality of what is happening today in health care.

Unless we all insist that a comprehensive benefit package, based on follow-up and treatment as needed for that child, is developed and funded, we are not going to achieve what we want to achieve.

QUESTIONNER: Here, here.

DR. ANAND: The last comment.

QUESTIONNER: One of the approaches that was not talked about much was advertising. You know a lot of discussion about comprehensive approaches, you know about getting into schools, and dealing with physicians, and dieticians, and lots of people.

When McDonald's wants to encourage people to eat Big Macs or their french fries, they do not go and do these kind of comprehensive programs. They do advertising and PR, which works very well and every 2-year-old in the country knows what a McDonald's hamburger is and thinks it is the most delicious food ever made.

USDA primarily uses the more traditional--I do not know--old-fashioned--I am not sure which to call it--approach of face-to-face programming. They talk to small groups. They talk to individuals and do nutrition education one-on-one or in very small groups.

That is a very expensive way of doing nutrition education. We think of it as being cheap. We can just go into the school. We can do our program. It does not cost much money, but it actually is very expensive. We compared different approaches to nutrition education using lowfat milk promotion as the example.

We found that in our 1-percent or less campaigns in West Virginia that it costs 17 cents per person to encourage them to switch from high-fat to lowfat milk using mass media approaches, using paid advertising on television and radio, and public relations.
It cost $17 per person to encourage them to switch to lowfat milk when you did this more traditional face-to-face approach. Those kinds of approaches are very expensive, all of the overhead, the hidden costs, the staff, materials, cost a lot of money. So, it is 50 cents versus $17 per person who switch to lowfat milk.

So, I would encourage us to think more--think beyond the kinds of approaches that we have talked about. We talked mostly about face-to-face approaches, a few policy approaches, but also to think about using the media. USDA has hundreds of millions of dollars that they use for nutrition education buried into all of these.

DR. ANAND: Where are they?

DR. MOORE: I wish they did.

PANELIST: Food stamp nutrition education money with nutrition education money, Team Nutrition, NET; it is not enough money, but there is some money there, but we are spending it

mostly to reach a small number of people. It is another approach to think about that does work, that the food industry has used very effectively to change eating habits.

DR. ANAND: Any comments?

PANELIST: Yes, I did have that included also in another piece of my paper and discussed it with Shirley Watkins.

DR. O'HARE: And I have to tell you, I thought that Oprah Winfrey might be the person to endorse the OPRA project if it turns out to really be effective, simply because she does reach a broad population--but some people say, "Well, not everybody in the country loves her." But I think an awful lot of people do listen to her programs, and that is one place our message could get across.

We have not mentioned today other public health initiatives that we have started, that have been very difficult to see because the other side has more money. I just bring up the fact that smoking has more money, and no matter what we are doing, I have to say RJR (Nabisco) has enough money to overcome all of the advertising.

It has really been very discouraging to most of us that have worked in smoking cessation for years to see them beating us out, even though we are putting money into the media, to try to persuade people with media messages. But I do think media and advertising and getting sexier about healthy foods would really be helpful.

DR. ANAND: Now let me bring the vision, the force, the inspiration, and both the carrot and the stick behind this program, Under Secretary Shirley Watkins.

CLOSING REMARKS

Shirley Watkins, Under Secretary for Food, Nutrition and Consumer Services

Shirley Watkins, Under Secretary for Food, Nutrition, and Consumer Services--Raj, I want to thank you and the staff, and to thank all of you, to thank the panel participants for being here this afternoon, to being here all day, and then for those of you who are strong and mighty staying with us to the bitter end, I cannot express how much all of this means to us and what we can do for children in this country.

I want to share a few things with you very quickly, because I know we promised to let you out of here at 4:15 and we are pretty much on target. That is pretty good for government people. I think we are doing pretty good.

Just kind of recap what I heard this morning. Evidence indicates that the roots of obesity lie in childhood, and we must make a systematic and concerted effort toward preventive measures, ensuring that children do not become obese and continue that trend as adults.

There are a number of factors that we believe contribute to the incidences of obesity, including ethnicity and environment. But it is clear that we also know what some of the solutions are, especially if we take preventive action in early childhood.

Effective nutrition education beginning in preschool is the key to giving children a healthy start in life. Included in education should be a clear emphasis on physical activity, in addition to good eating habits. In too many school districts time for play, vigorous activity is often lost and children can only eat and go back to sitting in their classes.

This does not encourage a healthy balance between nutrition and exercise. The answers to the epidemic of obesity are not mysterious. The problem lies in our collective willingness to translate what we know into what we do.

Secretary Glickman said this has been a silent epidemic, despite the fact that its consequences are significant and reach into the very heart of our society. When I went back before he came out here he said, "Shirley, do you know this is just as bad as tobacco?"

The problem is just as critical and it is getting literally no attention. I am so glad that we are doing this and raising it to this level. It is very sensitive. It is a complicated issue, but we have to have sensitive and compassionate solutions to end this problem.

I want to especially thank Dr. Satcher for being here with us today. It is the first time that a Surgeon General has ever been to the people's department, Department of Agriculture. Dr. Dietz, Dr. Goran, Dr. Birch, who had to leave Dr. Williams, Dr. Thomas Robinson, Dr. O'Hare, Connie Evers, who had to leave, Dr. Moore, Dr. Franks, Dr. Sims, I cannot say thanks enough to all of you.

I need to say to you something about the next steps, because I told you this was not just a routine kind of a symposium. So, let me tell you what the next steps are going to be.

A group of people that I have not said thanks to, my peers in the subcabinet, who were in and out today. You may not think that we talk to each other, but the Under Secretary for Foreign Act Services said to me in the hallway, "Shirley, I could not believe the crowd. It was absolutely fabulous. Let me know what I can do. I was so glad to hear them talk about farmers markets."

One of the people who helped us in the early stages of this was Dr. Cathy Woteki, who is the Under Secretary for Food Safety and Inspection Services. It is very critical that Cathy be involved with us on this issue, because something I did not hear you mention was the safety of food and the quality of the food that our children have. We do not want them to be afraid that our food is not safe. So, it is very important that Cathy is on board with us in this.

The other person, we saw Dr. Eileen Kennedy here earlier, who is the Deputy Under Secretary for REE--Research Education and Extension. Dr. Gonzalez has been working with us. So, you need to know that we are going to be working with the human nutrition centers in trying to figure out what are the kinds of things we need to do to improve in this and foster greater working relationships on childhood obesity with out human nutrition centers. So, you will hear that kind of collaborative effort just in the Department of Agriculture.

We are going to review the proceedings from today's session. We will ask the presenters to come back together with us as we review the recommendations, and to ask that they help me to come up with some three to five strategies that we could get done within the next year.

I would present those to the Secretary. I would expect to implement those recommendations using the bully pull pit of not only the Secretary, but the Surgeon General, and myself as well, to raise the level and the concern for childhood obesity and communicate the Secretary's direction to all of you; and to look at all of our food and nutrition assistance programs to not only focus on food and nutrition, but also the physical activity as the Secretary indicated today that he is challenging me to get busy on that.

I will send a message to the Secretary as soon as I get back in my office and say, "Mr. Secretary, I accept the challenge and I have already started." With the Team Nutrition Program, we have added a fourth component--that is to increase physical activity.

That has already begun with our "Yourself" kit for middle school children, and "Tickle Your Appetite" that we released for WIC and for not only just WIC. I said, "Well, we just cannot use it for WIC. We have to use it for CACFP, and we can also use that in elementary schools."

So, you see, we are looking at across how we can work our nutrition message into all of our programs. Next week--in 2 weeks, we have a food stamp session, a listening session with our partners in States and local food stamp operations. I will challenge them to look at their food stamp programs to see what we can do with nutrition education.

My goal is to make certain that everybody understands that the foundation in our agency is nutrition. We are not taking a back seat on that. That is going to be a very, very major focus for us. We want the best and the brightest to help us do it.

I may not be able to hire the staff, but we have added some collateral staff to help us with all of our issues. I want to thank Raj--and that just kind of tells you what we are going to be doing. I am going to ask Raj if he would find some kind of communication vehicle that would provide information to all of you letting you know what we are doing, and that we have some kind of little news bulletin as a way of letting people know what is going on.

I said to some earlier, "I do not talk a lot, and I am not very visible, but I sure work a lot." We try to make certain that that message goes to the entire staff, so they know exactly what is going on.

The other thing that you would need to know that this big puzzle that I have is I have put all of these pieces together, is to figure out how can we let the communities know what we are doing, and how can we get all of our nutrition assistance programs working together, so they feel like they are a part of one organization for families?

If we are working on behalf of families in this country, we have to figure out how we get that piece and that message across. In our contact with governors, the Secretary sent a letter 1 week, and 2 weeks later I followed up with another letter.

I am sure governors around this country are saying, "Who are those two people? They keep writing us about all of these wonderful things they want us to do." So, one of the things we wrote and said to the governors, "We really know you have outstanding programs and we want you to recognize those programs."

So we will have for the first time ever recognizing on November the 12th, presenting to five organizations, and people, and individuals around the country who work in these programs what is called the "Dan Glickman Pyramid Award of Excellence."

That will be presented on November the 12th. These people are representing all of the outstanding programs that we have. But a part of winning that award, they are going to have to make a presentation so that they can establish collaboratives when they get back home.

So there are a lot of things going on. We have a variety of things going on. You have provided us with a lot of information today. I look forward to reading the proceedings to figure out how we pull all of this together and make it work for the people that we serve. Thank you so much for joining us today and God bless all of you.

We have some tokens of appreciation that Dr. Anand wants to give. So, Raj, would you like to do this? Oh, he wants me to do it. Dr. Dietz, Bill--Mike, are you still here? Did he have to leave? Here he is. Leann had to leave. Christine, Tom.

I have a friend in Memphis, a long-time friend named Tom Robinson. You have to know that that is my maiden name, so we must be sister and brother.

DR. ROBINSON: Thank you.

MS. WATKINS: Donna, Barbara.

DR. MOORE: Thank you.

MS. WATKINS: Thank you. Okay. Thank you very much. Don, thank you so much. I was born in Hope, Arkansas, so you stop telling those Arkansas jokes. Laurie, thank you so much. Thanks to all of you and our hearts and roses go out to you. Thanks.

(Whereupon, the conference was adjourned.)

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